

Geophysical institute
University of Ljubljana
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

(Jan.-Mar. 1960)



Geophysical Institute
 at the AG Observatory Golovec
 University of Ljubljana
 Trg revolucije 11
 Yugoslavia

1960

PRELIMINARY SEISMOLOGICAL BULLETIN
 from January 1 to March 31 1960

Station Ljubljana - Coordinates: $46^{\circ} 2.6'N$ 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, 15 mm/min;

Constants:	T_0	v	r/T_0^2	V
N-S	4.8	2.3:1	0,018	80
E-W	4.7	2.5:1	0,015	84

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

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

JANUARY 1960

January

- 1 eiZ P 04 23 41.2 (+), USCGS: H= 04 11 40, 49N, 153 1/2 E, Kurile Islands;
- 1 eZ 23 24-25 traces; USCGS: H=23 12 31, 54N, 157 1/2 E, Near east coast of Kamchatka;
- 2 eZ P 05 19 19.6 (+), eZ 05 19 29.2, USCGS: H=05 06 54, 2 1/2 N, 96 E, Off coast of Sumatra;
- 2 (e)Z 12 40-41, traces; USCGS: H=12 21 51, South Atlantic Ocean, west of Bouvet Island;
- 2 eZ PKP 21 41 54.5, traces; USCGS: H=21 22 51, 5S, 152 1/2 E, New Britain;
- 2 eZ 23 20 46.2 (-) ;

-2-

January 1960

- 3 eZ P 11 32 43.4, eZ! 11 32 49.5, eZ 11 33 23.4, USCGS:H=11 24 00, 44 N, 84 1/2 E, Sinkiang Province, China;
- 3 eiZ! P 20 21 14.0 (+), iZNE S 20 22 32.4, iZ 20 22 41 BCIS:H=20 19 08, 39° 15' N, 15° 15' E, Tyrrhenian Sea, deep, h=290 km, felt in Calabria; D=780 km.---
- 3 eZ 21 32 13.4, disturbed by microseisms;
- 4 Z 06 24-27 traces;
- 4 eZ 09 23 15, (e)Z 09 24 (12), traces;
- 4 Z P 12 54 (00), eiZ 12 54 22.5, eiZ 12 54 51.3, iZ 12 55 18.9, iZNE S 12 56 21.0, iZ 12 56 31.1, iZ 12 56 46.2, eiZ 12 56 59.5, USCGS:H=12 51 52, 45 N, 27 E, Romania, D=1390 km. ---
- 5 iZ P or PKP 06 09 23.2 (+);
- 5 eZ 09 51 54.4, eZ 09 52 06.9;
- 6 (e)Z P 13 40 22.6, eZ 13 41 14.2, eZ 13 42 08.4, eiZ Sg 13 42 27.2, iZ 13 42 58.8, eZ 13 43 22.6, eZ 13 44 04.7, D= 725 km.---
- 6 iZ Pg 15 17 59.9 (-), iZNE Sg 15 18 19.9!, iZ 15 18 38.0, iZ 15 19 17.4 :Tz=2, Az=0.8, BCIS:H=15 17 36, 46 1/2 N, 12 1/2 E, Carnian Alps; D=168 km.---
- 6 iZ Pg 15 21 20.0 (+), iZ! Sg 15 21 40.1!, iZ 15 21 59.2, aftershock Carnian Alps;
- 6 iZ Pg 15 24 30.2, iZ! Sg 15 24 50.4!, aftershock Carnian Alps;
- 6 iZ Pg 15 45 31.5, iZ! Sg 15 45 52.4, iZ 15 45 55.8, iZ! 15 46 11.0! ; aftershock Carnian Alps;
- 6 iZ Pg 18 29 13.4, iZ! Sg 18 29 34.0!, iZ 18 29 37.7, aftershock Carnian Alps;
- 6 iZ 18 45 44.3, iZ! 18 45 04.7!, weak, aftershock?
- 7 eZ Pn 02 33 43.2, eZ 02 34 48.0, eZ Sn 02 35 09.7, eZ 02 35 39.5, iZ Sg 02 35 57.3, eiZ 02 36 04.0, eZ 02 36 24.6; D= 810 km.---
- 7 eZ Pn 06 01 30.4, eiZ Sg 06 02 24.3, D=appr.360 km.---
- 7 eZ P 08 27 26.1 (+), eZ 08 27 33.0, USCGS:H= 08 15 21 6 1/2 N, 94 E, Nicobar Islands;
- 7 eZ Pn 08 37 28.5, iZ Pg 08 37 29.3, iZ Sg 08 37 49.3, D=167 km.---
- 7 eZ P 10 48 03.9, eZ (S) 10 48 40.8, (D=331 km).---
- 7 iZ 10 56 28.1, traces;
- 7 Z 14 47 (01)(in the minute interruption), iZ Pg 14 47 02.1, iZNE! Sg 14 47 19.9!, iZ SgSg 14 47 23.3, iZ 14 47 31.1, iZ 14 47 38.0, eZ! 14 47 53.5!, D= 152 km, BCIS:H=14 46 33, 13E, 46 3/4 N, Carnian Alps; ---
- 7 Z 16 34-35 traces;

-3-

January 1960

- 7 iZ Pn 16 52 24.7, iZ (Pb) 16 52 28.4, iZ! Pg 16 52 35.3, iZ 16 52 46.0, iZ 16 52 55.2, iZ Sn 16 53 07.1, iZ Sb 16 53 16.5, iZSg 16 53 23.9, iZ SgSg 16 53 29.0, iZ 16 53 48.6, iZ 16 54 24.1; D=378 km.---
- 7 eZ P 17 41 05.5 (+);
- 7 eZ P 23 29 24.2, iZ 23 29 31.2; USCGS:H= 23 17 18, 6 1/2 N, 94 1/2 E, Nicobar Islands;
- 8 eZ P 05 24 26.6, iZ (Sg) 05 24 44.9; D=appr. 155 km.-
- 8 (e)Z 08 03 59.5, traces;
- 8 eZ Pg 11 09 26.7, iZ 11 09 37.1, iZ Sg 11 09 42.4, iZ 11 09 53.2; D= 125 km.---
- 8 Z 15 04-06 traces; USCGS:H=14 45 53, 55 1/2 S, 27 1/2 W, Sandwich Islands;
- 8 Z 21 09-14 traces, weak;
- 9 eZ P 04 02 14, eZ 04 03 09, eZ 04 06 08, eZ 04 07 08, eZ L 04 07 53; weak; USCGS:H=03 58 45, 37 N, 29 E, Southwestern Turkey;
- 9 iZ! P 07 31 35.5! (+), iZ 07 31 42.3, iZ 07 31 56.2, eiZ 07 32 05.9, eiZ 07 32 24.4, eiZ PP 07 33 18.8, iZ! 07 33 21.9, iZ (PPP) 07 33 43.9, eZ 07 34 14.5, iZ! S 07 36 51.9! ; USCGS:H= 07 23 50, 36N, 69 E, Hindu Kush, h about 150 km. D=appr. 4630 km.---
- 10 Z 10 45-46 traces;
- 10 eZ P 10 58 53, iZ S 10 59 11.8, D= 142 km.---
- 10 eZ P 16 53 42.7, iZ S 16 53 58.9, D= 135 km.---
- 11 eZ P 02 40 24.1, eZ 02 40 35.9; USCGS:H= 02 27 38, 28 1/2 N, 131 E, Ryukyu Islands;
- 11 eZ P 03 21 46, eZ 03 22 05; USCGS:H= 03 10 14, 16 N, 96 1/2 E, Near south coast of Burma;
- 11 eZ P 11 28 04.6, eiZ 11 28 22.0, eiZ 11 28 34.7, eiZ (S) 11 29 35.0, eZ 11 29 58, eZ 11 30 29.8, eZ 11 30 36; (D = appr. 860 km).---
- 11 Z 12 55-57 traces;
- 12 Z 02 05-06 traces;
- 13 eZ P 15 54 06.6, eZ pP 15 54 42.1, iZ 15 55 41.3, iZ PP 15 58 (00), iZ pPP 15 58 30.3, iZ 15 59 22, eZ (PPP) 16 00 30, eNE L 16 36-42, eZ L 16 37-42: Tz=20, Az= 25; USCGS:H= 15 40 34, 16 S, 72 W, Southern Peru, h about 200 km; Mag.=7 1/2 (Pas), 7 1/2- 7 3/4 (Berk), D= 11 200 km.---
- 13 eZ Pn 18 42 12.2 (-), eZ Pb 18 42 27.1, eZ Pg 18 42 43.5, iZ! Xl 18 42 58.4!, iZ Sn 18 43 25.2, iZ 18 43 39.2, iZ Sb 18 42 45.3, Z Sg 18 44 (00), iZ 18 44 20.9, iZ! Lg 18 44 27.1!, F= 18 47 - ; D= 680 km.--

-4-

January 1960

- 14 eZ P 02 53 40.3 (+), iZ 02 53 44.9, eZ 02 54 10, USCGS:H= 02 41 24, Near coast of northern Sumatra;
- 14 eZ 05 24 21.8 ;
- 14 eZ P 10 38 22.1 (+), eiZ 10 38 40.4, USCGS: H= 10 25 52, 37 N, 140 E, Honshu, Japan;
- 14 eZ 14 43 05.0, iZ 14 43 17.3;
- 14 eiZ P 21 35 28.4, eZ PcP 21 36 12.2, USCGS:H= 21 25 15, 11 N, 43 W, Atlantic Ocean;
- 16 (e)Z p 19 40 09.7, eZ 19 40 16.2, iZ Sg 19 40 22.2, iZ SgSg 19 40 26.1; D= 100 km.---
- 17 eZ 04 31 30.6, eZ 04 31 46.5; disturbed by microseisms.
- 18 (e)Z 01 17 18.1, iZ 01 17 39.3;
- 18 (e)Z 01 49 48 - traces;
- 19 eiZ P 02 28 51.8, eiZ PcP 02 29 06.4, eZ 02 29 27.5, eZ 02 29 50.5; USCGS:H= 02 16 52, 52 N, 158 E, Near southeast coast of Kamchatka. Mag.= 6 1/4- 6 1/2 (Pas), D= 8 720 km.---
- 19 eZ PKP₁ 09 33 57.1, eZ 09 34 20.0, eZ 09 36 15.7, USCGS:H= 09 15 04, 23 S, 180, South from Fiji Islands, h= 600 km, Mag.= 6 (Pas).
- 19 iZ 19 17 30.2;
- 20 iZ Pn 12 57 16.1, iZ Pg 12 57 18.7, iZ Sn 12 57 40.8, iZ! Sg 12 57 46.8!, iZ! 12 58 00.7! ; D= 215 km.---
- 20 Z 14 30-32 traces;
- 21 eZ 11 02 32, eZ 11 02 55 (PKP), USCGS:H= 10 43 33, 16 S, 179 1/2 E, Fiji Islands, h about 600 km;
- 21 (e)Z 19 52 28.4, eiZ 19 52 37.3, near;
- 23 eZ(P) 04 55 27.4, (e)Z PKP 04 59 25, eZ PP 05 00 00.5, eZ 05 00 18; USCGS:H= 04 40 56, 4 S, 127 1/2 E, Ceram Island region, Mag.= 6 3/4 (Pas), D= 12 150 km.---
- 23 eZ PKP₁ 06 43 11.7, iZ! PKP₂ 06 43 16.2!, eZ pPKP₂ 06 44 53; USCGS:H= 06 24 08, Fiji Islands region, 17 S, 177 W, h about 400 km.--- D=appr. 16.750 km.
- 23 eiZ PP 07 50 18.9, (first phases lost in chart changing) USCGS:H= 07 31 14, Ceram Island region, (4 S, 127 1/2 E), Mag.= 6 1/2 - 6 3/4 (Pas);
- 23 eZ PP 18 15 30.1, iZ 18 16 00.0, USCGS: H= 17 56 30, 4 S, 127 1/2 E, Ceram Island region, Mag.= 6 1/2 - 6 3/4 (Pas);
- 24 eZ PKP₁ 04 41 30.5, eZ PKP₂ 04 41 47.4, iZ! 04 41 55.7!, eZ 04 42 17.0; USCGS:H= 04 21 42, 15 1/2 S, 179 W, Fiji Islands region, Mag.= 6 1/4- 6 1/2 (Pas), D= 16.450 km.
- 24 iZ Pn 18 14 11.3, iZ Pg 18 14 15.3, iZ PgPg 18 14 26.2, iZ 18 14 30.1, iZ! Sg 18 14 38.2, iZ SgSg 18 14 41.0; D= 200 km.---

-5-

January 1960

- 25 Z 13 06-08 traces;
- 25 eZ p 16 44 05.8, iZ s 16 44 14.9, weak, D= 72 km.---
- 25 eZ PKP₁ 16 49 17.9, eZ 16 49 49.5, eZ 16 50 16.2, USCGS: H= 16 29 26, 16 S, 179 W, Fiji Islands, Mag.= 6 1/4 (Pas);
- 26 Z! 03 28 (00)!, eZ 03 10.2 ;
- 26 eZ P 09 56 30.5 (+), eiZ 09 56 37.2, eiZ PP 09 56 49.5, eZ 09 57 11.5, eZ 09 57 38.4, eZ 09 57 46.7; USCGS: H= 09 52 00, 39 1/2 N, 39 1/2 E, Turkey; D= 2.170 km.
- 26 iZ! P 13 09 03.6, eZ 13 09 21.8, eZ (S) 13 10 (22), eiZ 13 11 13.9; USCGS:H= 13 05 40, 38 N, 29 E, Turkey, D= appr. 1.500 km.
- 26 iZ! P 20 29 03.3! (-), iZ 20 29 11.7, iZ 20 29 17.4, eiZ 20 29 22.3, eZ S 20 30 30.0, eZ 20 31 31.6, eZ 20 32 32.5; BCIS: H= 20 27 05, 46N, 26 1/2 E, h= 150 km. Deep epicenter in Vrancea (Romania), D= 925 km.---
- 27 Z 21 23-25 traces;
- 28 eZ Pn 14 35 41.4, eZ Pg 14 35 46.4, eZ 14 36 15, eZ (Pn) 14 36 (55), BCIS:H= 14 34 15, 44.6 N, 6.5 E, Haute vallée de l'Ubaye (France), D= appr. 680 km.--
- 28 eZ (P) 03 33 04, eZ (S) 03 33 55.4, weak, D= 470 km.
- 31 eZ PKP 04 22 20.3 (-), USCGS:H= 04 03 11, 12 1/2 S, 167 1/2 E, Santa Cruz Island, h about 200 km.
- 31 eZ P 05 20 51.8 (+), eZ 05 21 14.2, eL 06 02 - :Tz=12, Az=10, USCGS:H= 05 08 18, 33 1/2 N, 134 1/2 E, Near east coast of Shikoku, Japan;
- 31 eZ PKP₁ 19 27 27.1, USCGS:H= 19 07 23, 16 S, 172 1/2 W, Samoa Islands region;

FEBRUARY 1960

February

- 1 eZ P 12 02 38.8 (-), iZ PP 12 02 53.6, Z 12 03 (00), eZ 12 03 38.0, eZ 12 03 54.9, eiZNE 12 04 57.4, eiZ 12 05 07.2, iZ 12 05 18.0, iZ 12 05 41.7; USCGS: H= 11 59 34, 35 N, 23 1/2 E, Near west coast of Crete, D= 1.420 km.---
- 2 (e)Z P 01 04 26.3, eZ 01 04 30.5, eZ 01 04 42.9, eiZ (S) 01 05 28.0; (D = 575 km);
- 2 Z 06 49.9- 52 traces, disturbed by microseisms;
- 3 eZ (PKP₁) 02 41 (02), iZ PKP₂ 02 42 02.6, USCGS: H= 02 20 55, 37 S, 179 E, Off coast of North Island, New Zealand, D= appr. 18. 400 km.---
- 3 iZ PKP 13 47 30.5 (+), USCGS:H= 13 28 29, 7 S, 154 1/2 E, Solomon Islands, Depth slightly greater than normal.
- 3 (e)Z (PKP) 14 48 (33), USCGS: H= 14 28 39, 19 S, 173

-6-

February 1960

- 3 (cont.) 1/2 W, Tonga Islands;
 3 Z 16 14 traces;
 3 eiZ P or PKP 18 12 47.7;
 4 eZ PKP 04 05 33.9 (-), eZ 04 06 09.4, eZ 04 06 29.8, eZ 07 11.1, eiZ 04 07 22.9, eiZ 04 07 33.5, eiZ 04 07 52.1; USCGS: H= 03 46 30, 4 1/2 S, 153 1/2 E, New Ireland region, D= 14.100 km.---
 4 eiZ 04 42 50.6 ;
 4 eiZ P or PKP 07 14 13.9 (+);
 4 eZ P 10 29 12, eiZ 10 29 46.7, USCGS: H= 10 20 39, 35 1/2 N, 78 E, Northern India, h about 100 km.
 4 eiZ P 17 02 58.8, (+), eZ 17 03 15.8, eZ 17 05 36, eZ 17 06 22, iZ 17 07 35.4, eiZ 17 08 51.5; USCGS: H=16 50 30, 39 N, 143 E, Off east coast of Honshu, Japan.
 4 iZ! PKP 20 57 10.6! (-), eZ 20 57 15.7, USCGS: H= 20 38 20, 18 1/2 S, 178 W, Fiji Islands, h about 600 km.
 6 eZ 12 01 24.1, iZ! 12 01 27.9, eZ 12 02 06, eiZ 12 02 30; near, disturbed by microseisms;
 6 eiZ P 17 24 08.5, USCGS: H= 17 10 45, 6 S, 104 E, Near coast of Sumatra;
 7 eiZ PKP 11 36 (46) disturbed, USCGS:H= 11 16 54, 15 1/2 S, 173 1/2 W, Samoa Islands region;
 8 Z 13 05 - traces in microseismic disturbance;
 8 (e)Z Pn 23 36 08.5, (e)Z (Sg) 23 38 (o7), disturbed, (D= appr. 740 km);
 10 Z 00 14-15, traces in microseisms;
 10 eZ PKP 23 39 44.1 (+), eZ 23 39 51.0, eZ 23 40 12.0, USCGS: H=23 19 55, 15 1/2 S, 173 W, Samoa Islands region;
 11 (e) Z 02 25 36, traces;
 11 Z 02 41-43 traces;
 11 Z 04 46 (00), traces, eZ 04 48 46 ;
 11 eiZ Pn 12 53 18.0, iZ Pg 12 53 28.7, eiZ Sg 12 54 18.5, iZ 12 54 46.7; D= 398 km.---
 13 eiZ Pn 04 35 40.2, iZ Pg 04 35 49.9, eZ Sn 04 36 16.6, eiZ Sg 04 36 32.1, iZ! 04 36 50.0! ; D= 336 km.---
 14 iZ Pg 01 13 39.3 (-), iZ 01 13 42.2, iZ 01 13 46.6, iZ 01 13 51.4, iZ! Sg 01 13 53.8, iZ 01 14 (00), iZ 01 14 08.5, iZ 01 14 25.5; D= 121 km.---
 14 eiZ Pn 08 41 38.2, iZ Pg 08 41 46.8, iZ Sn 08 42 14.0, iZ Sg 08 42 21.8, iZ! 08 42 42.8! ; D= 310 km.---
 14 (e)Z 10 50 27, Z 10 51 (00);
 14 eZ 16 00 30;

-7-

February 1960

- 15 eZ 15 28 41 ;
 15 eZ P or PKP 20 10 52.4 ;
 16 (e)Z 05 49 36.3, eZ 05 50 24.4, iZ 05 50 34.2 ; near ;
 16 eZ P 13 24 05, eZ 13 24 34.2 ; USCGS:H= 13 14 31, 22 N, 45 1/2 W, Atlantic Ocean;
 16 iZ 14 30 34.2, iZ 14 31 15.3, eiZ 14 31 23.8; artificial ?
 17 iZ p 15 32 57.4 (-), iZ s 15 33 03.9, iZ 15 33 21.4, iZ 15 33 38.2, iZ 15 33 49.0 ; D= 55 km; felt Rijeka (IV^o MCS) and Trieste.
 19 Z 02 31 (01) minute interruption, iZ Pg 02 31 07.2, iZ PgPg 02 31 10.6, iZNE Sn 02 31 36.6, iZNE! Sg 02 31 46.3, iZ SgSg 02 31 51.6, iZ! 02 32 04.6!, iZ 02 32 10.3, iZ 02 32 32.7, eiZ 02 33 21.2; BCIS: H= 02 30 14, 45.6 N, 10.5 E, Northern Lombardy, west from Lake Garda; D= appr. 300 km.---
 19 (e)Z 03 33 57, (e)Z 03 34 24 ;
 19 eiZ P 10 44 30.7 (+), iZ 10 44 53.2, iZE pP 10 45 17.9, iZE! sP 10 45 39.7!; Tz=1.7 - Az=4, iZ PP 10 46 15, eiZ! sPP 10 47 10.6, iZ 10 47 19.0, F appr. 11 00 -; USCGS:H= 10 36 46, 36N, 70 1/2 E, Hindu Kush, h about 200 km, D= 4.880 km.---
 19 eZ 21 38 21, eZ 21 38 37.6, eZ 21 40 15;
 20 iZ P 04 41 15.5, iZ 04 41 25.5, iZ Sn 04 41 38.0, iZ Sg 04 41 46.5, eiZ 04 42 05 ; felt at Perušić V^oMCS (44°38'N, 15° 23'E), P.R. Croatia , D= 167 km.---
 20 iZ P 04 43 06.5, iZ S 04 43 25.3 ; Perušić aftershock;
 21 (e)Z (PKP₁) 01 06 (51), (e)Z 01 07 12.1, eZ (PKP₂) 01 07 49.4, eiZ 01 08 03.3, eZ! 01 11 48; USCGS:H= 00 46 56, 42 S, 173 E, South Island, New Zealand, h about 60 km, (D=18.150 km) . ---
 21 eZ (P) 08 16 40.1, eiZ 08 16 42.4, eZ 08 17 21, eZ 08 20 12, eZ 08 25 12 ; USCGS: H= 08 13 31, 36 N, 4 1/2 E, Northern Algeria (Melouza, Beni Ilman);
 21 eiZ P 09 34 07.3 (+), iZ 09 34 16.4, eZ 09 34 51.1, USCGS: H= 09 29 15, 38 N, 42 E, Turkey;
 21 iZ 09 58 18.0 (+), USCGS:H= 09 39 26, 20 S, 178 1/2 W, Fiji Islands, h about 600 km. --
 21 eZ Pn 11 48 25.2, eiZ Pg 11 48 44.3, iZ 11 48 59.9, eZ Sn 11 49 18.3, eZ Sg 11 49 43.4, iZ Lg 11 49 53.3, eiZ 11 50 11 ; D=appr. 500 km.---
 22 eZ 01 13 14.6, iZ! 01 13 21.8, iZ 01 13 34;
 22 (e)Z 05 39 49, eiZ 05 40 32.0 ;
 22 eiZ Pn 21 06 18.4, iZ 21 06 22.1, iZ 21 06 26.7, iZ 21 06 32.6, eiZ 21 06 49.4, eiZ 21 06 51.7, iZ (Pg)

February

-8-

- 22 (cont.)
21 06 56.2, eZ (Sn) 21 07 46.9, iZ! 21 07 57.3!, eiZ (Sb) 21 08 14.6, iZ 21 08 24.0, iZ 21 08 30.1, iZ 21 08 34.8, eiZ! Sg 21 08 41.8, iZ 21 09 14.3, iZ! 21 09 29.2!, iZ 21 09 43.0; BCIS: H= 21 04.6, 39 1/4 N, 20 1/2 E, - USCGS: H= 21 04 09, 39N, 21 E, Greece, D=890 km.
- 23 eiZ Pn 00 33 06.0, iZ 00 33 15.9, iZ 00 33 30.5, eiZ (Sn) 00 34 31.9, iZ 00 34 57.3, eiZ (Sg) 00 35 44.5, iZ! 00 35 57.5!, iZ! 00 36 19.0!; Tz=2, Az=1, iZ 00 36 58.4; BCIS: H=00 31.0, 39 1/4 N, 20 1/2 E; USCGS: H= 00 30 58, 39 N, 20 1/2 E, D= 890 km.---
- 23 eZ 02 17 31.2, iZ 02 18 18.1, eiZ 02 18 35.6, eZ 02 19 15 ;
- 23 Z 07 19-24, traces;
- 23 eiZ Pn 07 36 32.0, iZ 07 36 37, iZ 07 37 36, iZ Sn 07 38 (08), iZ! (Sg) 07 38 57!, iM 07 39 50 :Tz=2, Az= 2.5, BCIS: H=07 34.5, 39 1/4 N, 20 1/2 E; USCGS: H= 07 34 30, 39 N, 20 E, Greece; (D=920 km).
- 23 eZ Pn 07 49 53.9, eiZ 07 50 09, iZ 07 50 40.8, iZ 07 51 09.8, iZ 07 51 32, iZ 07 52 35; BCIS: H= 07 47.8, 39 1/4 N, 20 1/2 E, USCGS: H= 07 47 51, 39 N, 20 1/2 E, Greece
- 23 iZ PKP 11 50 05.1 (-), USCGS: H= 11 31 04, 19 S, 178 W, Fiji Islands, h about 500 km.
- 23 iZ p 14 06 57.2, iZ s 14 06 59.8, D= 15 km, not felt.
- 24 Z (P) 01 51 (00) in the minute interruption, eiZ Sn 01 51 43.7, eZ 01 52 10.3, eiZ 01 52 28.2, eZ 01 52 34.5, eZ 01 53 26, eZ 01 54 33 ; D=appr. 390 km.--
- 24 iZ Pn 03 14 33.1, iZ! Pg 03 14 39.1!, iZ! Sg 03 15 10.0, iZ 03 15 14.0, iZ 03 15 27.7, eZ 03 15 59.0 ; D = appr. 260 km.
- 24 eiZ 10 31 27.3;
- 24 eZ (P) 15 03 28.1, iZ (S) 15 03 49.5, (D= 170 km).
- 24 eZ 19 00 14.8, iZ 19 00 21.7, USCGS: H= 18 55 20, 38 N, 41 E, Turkey;
- 24 Z 21 02-04 traces;
- 24 eiZ PKP 21 56 14.7 (+) Tz=1.6, Az=0.6, eZ 21 56 32.9, eZ 21 58 19, eZ 21 59 34, USCGS: H= 21 37 04, 7 1/2 S, 156 E, Solomon Islands, Mag.= 6 1/2- 6 3/4 (Pas);
- 26 eZ PKP₁ 06 52 30.0, eiZ 06 52 32.3, eZ 06 52 56.2, USCGS: H= 06 32 36, 20 S, 174 W, Tonga Islands;
- 26 eZ P 23 41 49.8, traces; USCGS: H= 23 29 25, 51 1/2 N, 178 W, Aleutian Islands, Mag.= 6 - 6 1/4 (Pas);
- 27 eZ 09 16 47.6, USCGS: H= 08 56 00, 30 1/2 S, 179 1/2 W, Kermadec Islands;
- 27 Z 12 42-46 traces;
- 27 eZ PKP 14 42 24.3 (-) USCGS: H= 14 23 29, 7 S, 156 1/2 E,

February 1960

-9-

- 27 (cont.) Solomon Islands, h about 150 km.
- 27 (e)Z PKP 14 17 39.1, (-), USCGS: H= 13 57 56 , 7 S, 156 1/2 E, Solomon Islands, h about 150 km.
- 28 eiZ 13 15 15.4, eiZ 13 15 33.4;
- 29 (e)Z 00 31 19, traces;
- 29 eZ P 05 35 46.5 (-), USCGS: H= 05 22 53, 14 N, 120 E, Near southwest coast of Luzon, P.I., h about 150 km.
- 29 eiZ P 23 45 35.1 (+) Tz=2, Az=0.25, iZNE! 23 45 37.7! Tz=2, Az=3, iZNE! 23 45 53.3!, iZ 23 46 (00), iZ PP 23 46 14.8, iZ 23 47 (00), iZ 23 47 15, iZ 23 48 44.2, iZ 23 49 15.8, eZNE (S) 23 50 (00), eZ SS 23 50 59.5; BCIS: H= 23 40 13, 30.5 N, 9.7 W, Mag.= 6 (BCIS), USCGS: H= 23 40 12, 30 N, 9 W, Morocco- Agadir; D=2.700 km.---

March 1960

MARCH 1960

- 1 eZ 08 26 22.0 (+), traces;
- 2 eZ P 22 02 33.4, eZ 22 02 39.9; USCGS: H= 21 56 08, 30 W, 52 N, North Atlantic Ocean;
- 4 eZ P 02 28 27.3, eiZ 02 28 42.2, USCGS: H= 02 15 56, 50 1/2 N, 177 W, Adreanoff Islands, Aleutian Islands.
- 4 iZ P 04 05 25.6 (+), eZ 04 05 30.8, eZ 04 07 22.3, eZ 04 08 42.8; USCGS: H=03 53 00, 31 N, 129 E, Near south coast of Kyushu, Japan, h about 100 km. Mag.= 6 1/2 (Pas).
- 4 eZ 07 51 08.0, eiZ 07 53 14.7, traces;
- 4 Z 16 31-32 traces;
- 4 eiZ P 21 17 45.7, eiZ 21 17 52.2, USCGS: H= 21 05 45, 7 1/2 N, 94 E, Nicobar Islands;
- 5 iZ P 11 34 29.1 (+), iZ 11 34 36.2, iZ (PcP) 11 35 34.9, USCGS: H= 11 25 00, 29 N, 81 E, Nepal;
- 5 (e)Z (PP) 14 07 (49), eZ 14 08 12.5, eZ 14 08 45.2, USCGS: H= 13 49 16, 1 N, 129 E, Halmahera, Mag.= 6 3/4 (Pas);
- 6 eZ (P) 17 28 (11) disturbed, eiZ 17 28 40.3, eiZ (Sg) 17 30 11.4, eZ 17 31 31.8, (D= 750 km).--
- 8 iZ! PKP 16 52 45.4, iZNE 16 53 03, iZ pPKP 16 53 37, iZ! PP 16 56 05; USCGS: H= 16 33 38, 16 1/2 S, 168 1/2 E, New Hebrides, h about 250 km. Mag.=7-7 1/4 (Pas), 7 (Berk); D=appr. 16.200 km.--
- 9 eZ 08 37 (17), eZ 08 40 23, eZ 08 40 32;
- 9 Z 23 18 - 20 traces; near;
- 10 eiZ P 00 07 57.7 (-), eiZ PP 00 11 57.8; USCGS: H= 23 54 20, 16 S, 72 W, Southern Peru, h about 150 km, D= 10.800 km.-

-10-

March 1960

- 10 eiZ PKP₁ 14 04 09.9 (+), iZ! 14 04 13.8!, eiZ 14 04 26.8, eZ 14 04 51.2; USCGS:H= 13 44 25, 15 S, 174 W, Samoa Islands region;
- 10 eiZ P 14 44 42.3 (+), USCGS:H= 14 32 29, 47 N, 152 E, Kurile Islands, h about 100 km.
- 11 eiZ 11 45 07.5 ;
- 11 (e)Z (P) 12 47 17.1, (e)Z (S) 12 48 54, disturbed by microseisms,(D=930 km).-
- 12 iZ Pn 00 31 40.4, iZ Pb 00 31 49.6, iZ Pg 00 31 54.4, iZ Xl 00 32 08.5, iZ Sn 00 32 29.3, iZ Sx 00 32 41.2, iZ Sb 00 32 46.4, iZ! Sg 00 32 56.3!, iZ 00 33 22.4, eiZ 00 33 35.7, D= 490 km.---
- 12 iZ! Pn 11 55 36.4 (+), iZ 11 55 50.3, eNE Sn 11 56 47, eiNE Sg 11 57 25.3, (Z underexposed), iNE Lg 11 57 43.5, iNE M 11 58 (00), iE 11 58 31.6; Lg: T_{n,e} = 5, Ae=24, An=29; M: Te=7, Tn=7.2, Ae=54, An=65; Felt Tetovo-Gostivar, P.R.Makedonia, Yugoslavia; Tetovo: 42°01'N, 20°58'E, VIII^oMCS, one victim, several hurt, considerable material damage, macroseismic radius =120 km. Felt also: Skopje, Titov Veles, Prilep); D= 670 km.--
- 12 eiZ Pn 12 04 07.2, iZ! 12 04 28.6!, iZ Pg 12 04 36.1, iZ 12 05 09.8, iZ (Sn) 12 05 23.3, iZ Sg 12 05 56.0, iZ Lg 12 06 18.3, iZ! 12 06 22.4!; Tetovo aftershock, weak, D= 670 km.---
- 12 eZ PKP 20 49 47.0, disturbed by microseisms, USCGS:H= 20 30 39, 6 S, 152 E, New Britain, M= 6 1/2 (Pas);
- 13 eiZ 12 59 45.8, traces;
- 14 eZ Pn 04 45 (40) disturbed, eiZ Pg 04 45 55.4, iZ 04 46 16.0, eiZ 04 46 33.2, eiZ 04 46 37.3, eiZ 04 46 40.4, eiZ Sg 04 46 49.0, eZ 04 47 04.6; D= 450 km.---
- 14 Z 20 39-40 traces;
- 15 eiZ P 09 33 26.3, USCGS:H= 09 20 56, 51 N, 174 1/2 W, Andreanoff Islands, Aleutian Islands;
- 15 Z 10 29-30 traces;
- 15 iZ Pg 20 59 40.6, iZ Sg 20 59 55.7, iZ Sg Sg 20 59 59.2, iZ 21 00 15.1, D= 125 km, weak;
- 16 iZ Pn 01 53 44.1, iZ! Pb 01 53 51.3!, Z Pg 01 54 (00), iZ Xl 01 54 15.3, iZ Sn 01 54 31.1, iZ! Sb 01 54 44.0!, eiZ(Sg) 01 54 54.9, eiZ 01 55 13.7, iZ 01 55 20.4, D= 458 km.---
- 16 iZ! Pn 14 33 29.4! (-), iZ Sn 14 33 59.5, iZ Sg 14 34 11.1, iZ 14 34 28.8; D= 267 km.---
- 16 eZ PKP 17 59 06.8, eZ 17 59 18.0, USCGS:H= 17 39 16, 15 1/2 S, 173 1/2 W, Samoa Islands region;
- 17 Z 07 03-06 traces;
- 17 eZ 11 03 20.5, traces;

-11-

March 1960

- 18 (e)Z P 12 42 07.9, eiZ S 12 43 17.8, weak, D= 650 km.
- 18 eZ 23 51 21.6;
- 20 eZ P 17 19 56.1 (-), iZ! 17 20 30.8, iZ 17 22 58.5, iZNE PP 17 23 16.6, eiZ 17 24 28.5, eZ PPP 17 19 16, eNE PPP 17 19 18, eZ 17 27 40, eZNE S 17 30 44, eZNE! 17 31 28, eM 18 00-03: Tz=15, Az=250, Te=15, Ae=615, Tn=15, An=460; USCGS:H= 17 07 30, 40 N, 143 1/2 E, Off northeast coast of Honshu, Japan, h about 60 km, Mag.= 7 (Pas), 7-7 1/4 (Berk), D= appr. 9.600 km.---
- 21 eZ P 00 47 17.5, USCGS: H= 00 34 50, 39 1/2 N, 143 E, Near east coast of Honshu, Japan, M= 6 1/2 (Pas);
- 21 (e)Z P or PKP 02 09 (41);
- 21 (e)Z Pn 04 38 52.4, iZ Pg 04 39 08.5, eZ (Sn) 04 39 33.6, iZ Sg 04 39 52.1; D= 393 km.---
- 21 Z 07 23-27 traces;
- 21 eZ P 09 30 48.3 (+), eiZ 09 31 14.4, eiZ! 09 32 49.1, eiZ! 09 32 55.3!, USCGS:H= 09 18 22, 40 N, 143 E, Near east coast of Honshu, Japan;
- 21 eZ (P) 09 50 13.5 (-), eiZ 09 50 23.4;
- 21 eZ 10 23 12.4;
- 21 (e)Z PKP 12 00 (09), USCGS:H=11 40 15, 16 1/2 S, 172 1/2 W, Samoa Islands region;
- 21 iZ! p 18 02 32.3, iZNE 18 02 34.1, iZNE! s 18 02 39.1, iZ 18 02 (55), iZ 18 03 25.9, iZ 18 03 53.8; BCIS: H= 18 02 22, 46 N, 15.2 E, Yugoslavia; felt Sevnica (P.R. Slovenia-Yugoslavia) V^oMCS; Coordinates Sevnica: 46° 0.6'N, 15° 17'E; D= 48 km.---
- 22 eZ P or PKP 20 34 51.5 ;
- 23 eiZ P 00 35 49.8 (+), eiZ 00 36 13.3, eiZ PP 00 39 06.4, eiZ PPP 00 41 05, eZ 00 43 32.0, eZNE M 01 16-19 : Tz= 18, Az= 40 ; USCGS: H= 00 23 22, 39 1/2 N, 143 E, Near east coast of Honshu, Japan; D= 9.390 km.---
- 23 (e) Z P 01 19 (46) (+), USCGS: H= 01 07 15, 39 1/2 N, 143 E, Near east coast of Honshu, Japan, aftershock;
- 23 iZ 07 30 19.3, iZ 07 30 28.2, seismic?
- 23 eiZ P 08 59 10.2, USCGS: H= 08 46 44, 40 N, 142 1/2 E, Near east coast of Honshu Japan, h about 100 km./.
- 23 eZ P 10 41 20.1, USCGS: H= 10 29 01, 39 1/2 N, 143 E, Near east coast of Honshu, Japan;
- 23 eZ P 12 03 29.1, USCGS: H= 11 51 00, 39 1/2 N, 143 E, Near east coast of Honshu, Japan;
- 23 iZ 13 36 22.3, iZ 13 36 33.2, seismic ?
- 23 eZ P or PKP 16 13 35.7;
- 23 eZ P or PKP 20 14 39.3;

-12-

March 1960

- 23 eiZ P or PKP 21 46 48.7 ;
- 23 eZ P 22 35 05.5, iZ 22 35 17.9, eZ PP 22 40 09; USCGS: 22 22 36, 39 1/2 N, 143 E, Near east coast of Honshu, Japan, Mag.= 6 (Pas), D= 9400 km.---
- 23 Z Pn 23 10 (00), iZ 23 10 04.4, iZ! 23 10 13.5!, iZNE! Pg 23 10 19.4!, iZ Xl 23 10 29.4, iZ 23 10 43, iZ Sn 23 10 55.8, iZ (Sb) 23 11 07.4, iZNE! Sg 23 11 14.9!, iZ 23 11 39.7, eL 23 16 - :Tz=15, Az=10, NE traces; BCIS: H= 23 08 53, 46°29'N, 8° 06'E, Berner Alpen, Switzerland, D= 510 km.---
- 24 eZ P 06 06 40.4 (-), USCGS: H= 05 54 28, 47 N, 152 1/2 E, Kurile Islands;
- 24 Z 15 59 - 16 00 traces, near?
- 25 iZ! P or PKP 02 48 07.3! (-), eiZ 02 49 50.5 ;
- 25 eiZ P or PKP 03 17 17.3;
- 25 eiZ Pn 13 50 11.8, eiZ 13 50 16.1, eiZ Pg 13 50 18.6, eiZ Sn 13 50 46.7, iZ Sb 13 50 50.9, iZ! Sg 13 50 56.3!, iZ 13 51 05.5; D= 300 km.---
- 27 (e)Z PKP 04 07 50.8, eZ 04 11 (00), eZ 04 12 09.5, USCGS:H= 03 48 27, 13 1/2 S, 166 E, New Hebrides Isl. Mag.=6 1/4 (Berk);
- 27 (e)Z PKP 09 17 20.3, eZ 09 17 25.5, (e)Z PKS 09 20 12, eZ PP 09 21 13.5, USCGS: H= 08 57 53, 13 1/2 S, 166 1/2 E, New Hebrides, Mag.= 6 1/2 (Berk), D = appr. 17.760 km.---
- 27 eZ P or PKP 17 44 43.3;
- 27 (e)Z 19 55 01.7, traces;
- 27 (e)Z P 20 29 (07), eZ 20 32 55.6, USCGS: H= 20 15 46 20 N, 104 1/2 W, Jalisco, Mexico, Mag.= 5 3/4- 6 (Berk), 6- 6 1/4 (Pas);
- 27 eZ 23 48 03.5, iZ! 23 48 58.4 ;
- 28 eZ P 00 26 35.4, USCGS:H= 00 13 38, 7 1/2 N, 82 W, Off south coast of Panama. Mag.= 6 1/4-6 1/2 (Berk), 6 1/2 -6 3/4 (Pas);
- 28 (e)Z Pn 02 53 27.3, eZ 02 53 35.1, eiZ Sg 02 54 42.1, eiZ 02 54 47.4, BCIS: H= 02 52 14, 48.3°N, 9°E, Zollernalb, Germany; D= 490 km.---
- 28 eZ 06 55 30.5;
- 28 eZ 07 02 18.4, eZ 07 02 23.4,;
- 29 iZ P 06 50 33.9, iZ 06 50 39.4, iZ 06 50 56.5, further phases lost while changing chart;
- 29 eiZ P or PKP 07 43 14.7, eZ 07 43 47.4;
- 30 eZ 10 12 35 ;
- 30 eiZ PKP 11 09 16.2, eiZ 11 09 27.0, eZ 11 10 27, eZ PP 11 11 56; D= appr. 15.600 km.---

-13-

March 1960

- 30 eZ 14 24 48.3, traces;
- 30 (e)Z Pn 15 38 03.5, eZ Pg 15 38 13.2, eZ Sg 15 38 52.4, D= 331 km; weak;
- 30 iZ PKP 15 39 24.4,(+), iZ 15 39 31.3, eiZ 15 39 57, eZ 15 40 12.5 ;
- 31 eZ P or PKP 03 14 32.5 (+);
- 31 eZ 10 10 41.0 ;

Ljubljana, March 31, 1960

V. Ribarič

Geophysical institute
University of Ljubljana
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

(April-June 1960)



Geophysical Institute
 at the AG Observatory Golovec
 University of Ljubljana
 Trg revolucije 11
 Yugoslavia

1960

PRELIMINARY SEISMOLOGICAL BULLETIN
 FROM APRIL 1, TO JUNE 30 1960

Station Ljubljana- Coordinates: 46° 2.6' 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, 15 mm/min;

Constants:	T_0	v	r/T_0^2	V
N-S	4.9	2.4: 1	0.016	81
E-W	4.8	2.5: 1	0.014	86

Hiller-"Stuttgart", vertical component Z - galvanometrical recording; $T = 1.5$ sec, $T_g = 1.5$ sec, $D_1 = D_2 = 1$,
 $V_{max} = 10\ 150$, velocity of registration: 60mm/min;

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

April

APRIL 1960

- 1 eiZ-PKP 1 03 13 50.0, eZ 03 14 (00), eZ 03 16 20, USCGS:H= 02 55 04, 22 S, 179 1/2W, Fiji Islands region, h= 650 km;
- 1 Z 17 37-40 traces;
- 1 (e)Z Pn 18 50 43, eiZ (S) 18 52 30.7, eiZ 18 52 46.9, (D= 1040 km), weak;
- 1 eZ+ PKP 23 21 22.3, iZ! 23 21 27.7!, USCGS:H= 23 02 31, 17 1/2 S, 180, Fiji Islands, h about 550 km;
- 2 Z 20 08-09 traces, disturbed by microseisms;
- 3 iZ 03 48 20.7, near, disturbed by microseisms;
- 3 iZ+ Pg 20 14 21.2, iZ Sg 20 14 40.7, iZ(SgSg) 20 14 44.9, D= 155 km;

April 1960

-2-

- 5 eZ P 17 30 13.7, USCGS:H= 17 25 19, 65 N, 2W, North Atlantic Ocean;
- 6 eZ P or PKP 21 22 12.0;
- 7 (e)Z P or PKP 03 26 (56);
- 7 eiZ PKP₁ 14 06 27.3, iZ 14 06 37.0, iZ!(PKP₂) 14 06 56.1!, USCGS:H= 13 47 28, 24S, 179 1/2 W, Fiji Islands region, h about 500 km, Mag.=6 (Berk), D= 17 100 km;
- 7 (e)Z P 19 46 48, eZ 19 49 03;
- 8 eiZ- P or PKP 00 15 25.4, iZ! 00 15 34.4, iZ! 00 15 47.6, eZ 00 16 18.3;
- 9 iZ P or PKP 07 53 52.4, eZ 07 54 28;
- 10 Z 14 20-22, traces, near;
- 10 eiZ- P or PKP 15 51 08.7, eiZ 15 51 40.9;
- 10 eiZ+ P 20 38 31.9, traces, USCGS:H= 20 26 12, 53 N, 167 1/2 W, Fox Islands, Aleutian Islands;
- 10 (e)Z P 22 08 33, USCGS:H= 22 05 29, Western Turkey;
- 10 iZ!Pg 22 50 48.3, iZ!Sg 22 50 51.6, D= 23.3 km, weak;
- 10 iZ! 22 52 06.0, near, traces;
- 11 Z 04 11-20 traces, weak;
- 12 eZ+ P 04 25 44.0, eZ 04 29 59, USCGS:H= 04 22 (35), Western Turkey;
- 13 (e)Z Pg 05 57 48.2, Z 05 58 (00), iZ SgSg 05 58 06.1, iZ 05 58 20.3; D= 85 km;
- 13 eZ 12 50 58, eiZ 12 51 25, disturbed by microseisms, USCGS:H= 12 37 38, 15 1/2 N, 92 1/2 W, Guatemala-Mexico border, Mag.=5 3/4 (Berk), 6 (Pas);
- 15 eiZ+ Pg 02 45 57.0, iZ PgPg 02 46 04.2, iZ 02 46 07.9, iZ Sg 02 46 31.9, iZ Sx 02 46 44.4, iZ! 02 46 56.2!, D= 290 km;
- 15 Z 03 45-46 traces, USCGS:H= 03 25 38, 27S, 113 W, Easter Island region, Mag.= 6 1/2 (Pas.);
- 15 iZ Pg 11 09 53.6, iZ PgPg 11 10 00.4, iZ Sg 11 10 27.4, iZ! 11 10 40.2, iZ 11 10 55.5; D= 290 km, aftershock;
- 15 iZ!-Pg 18 57 56.2, iZ! Sg 18 57 59.3, D= 24.4 km, weak, not felt;
- 15 (e)Z Pg 19 27 46.7, iZ Sg 19 27 49.5, aftershock, very weak;
- 15 eiZ PKP 22 24 34.2, iZ 22 24 39.1, eZ (PP) 22 27 34; USCGS:H= 22 05 06, 13 1/2 S, 166 E, New Hebrides Islands, Mag.= 6 1/2 (Pas), D= appr. 15 500 km;
- 17 iZ! PKP 22 08 30.5, USCGS:H= 21 49 24, 20 S, 180, Fiji Islands, h about 500 km;
- 18 iZ P 08 19 25.9, USCGS:H= 08 07 07, 28 N, 139 1/2 E, Bonin Islands region, h about 450 km;

April 1960

-3-

- 19 Z 09 42-43, traces, USCGS:H= 09 22 31, 20 S, 173 1/2 W, Tonga Islands;
- 19 eZ P or PKP 18 22 20.3;
- 20 eZ P or PKP 15 45 08.0;
- 20 (e)Z P 19 30 48.2, eZ 19 31 31.1, USCGS:H= 19 23 04, 37 N, 71 E, Hindu Kush, h about 200 km;
- 21 (e)Z 07 12 33, eiZ 07 12 48.7, eZ 07 13 55, traces;
- 21 eZ 10 00 23, traces,;
- 21 eZ PKP 16 41 53, USCGS:H= 16 21 57, 20 1/2 S, 174 W, Tonga Islands;
- 21 Z 20 37- 41 traces;
- 22 eZ- PKP₁ 20 45 56.9, iZ! PKP₂ 20 46 (03), iZ 20 46 09.8, iZ pPKP 20 46 57.1, (e)Z PP 20 49 36; USCGS:H= 20 26 28, 17 1/2 S, 174 1/2 W, Tonga Islands, h about 200 km, D= 16 350 km;
- 23 (e) Z 10 59 (06.5), (e)Z 10 59 21, (e)Z 10 59 58, eiZ 11 00 09.0, eZ (Sg) 11 00 24.9, eiZ 11 00 35.2; weak;
- 23 (e)Z Pn 11 44 50.2, iZ Pg 11 45 03.3, eiZ Sn 11 45 31.3, eiZ Sg 11 45 46.7, iZ! 11 46 00.3, iZ! 11 46 15.8; BCIS: H= 11 43 55, 43 N, 13 E, Roman Apennines, Foligno region, D= 370 km;
- 23 eZ P 13 18 18.1, USCGS:H= 13 08 35, 45 N, 98 E, Outer Mongolia;
- 23 eZ PKP 12 28 27, USCGS: H= 12 09 00, 17 S, 175 W, Tonga Islands, h about 200 km;
- 24 eiZ - P 03 35 13.3, eZ 03 35 31.2, eZ pP 03 37 23, eiZ 03 37 42.7, eiZ! PP 03 39 27.3,!, eZ 03 40 07, eZ 03 41 33, eZ 03 41 56; USCGS: H= 03 22 23, 6 S, 113 1/2 E, Java Sea, h about 600 km, D= 11 150 km;
- 24 (e)Z 12 05 46, iZ 12 06 06.2, eiZ Sg 12 06 32, near, weak;
- 24 eiZ+ P 12 21 35.0, eiZ 12 21 39.7, eiZ 12 21 49.3, iZ 12 22 16.3, (e)Z PP 12 23 08, (e) Z (S) 12 27 (12), cont. traces, USCGS:H= 12 14 26, 28 N, 54 1/2 E, Southern Iran, Gerash and Lar;
- 25 (e)Z P 01 25 32.4, eiZ S 01 26 12, eiZ 01 26 24, iZ 01 26 33, D= 370 km, weak;
- 25 Z 16 31 (15) traces, Z 16 34-37, traces disturbed by microseisms, USCGS:H= 16 28 32, Aegean Sea, 38 1/2 N, 25 E;
- 26 (e)Z Pb 11 01 25.3, eiZ Sb 11 02 34.3, iZ Sg 11 02 45.1, BCIS: H= 10 59 55, 46.7°N, 7.5°E, Bernesi Alps, weak; (D=550 km);
- 28 Z 11 09-11 traces;
- 28 Z 16 36.9- 42 traces, USCGS: H= 16 33 25, 35 1/2 N, 27 E, Dodecanese Islands, disturbed by microseisms;
- 28 eZ PKP 13 58 30.1, USCGS: H= 13 38 31, 30 S, 178 1/2 W, Kermadec Islands;

April 1960

-4-

- 29 (e)Z P 19 46 07, eZ PP 19 50 17.3, USCGS:H= 19 32 12, 0, 122 E, Celebes, D= 11 270 km;
- 29 eiZ+ Pg 23 12 46.3, iZ Sg 23 12 48.4, iZ SgSg 23 12 51.2, D= 13 km, weak;
- 30 eiZ+ Pn 00 52 48.1, iZ 00 53 21.1, iZ Sg 00 53 37.5, iZ! 00 53 54.0, D= 330 km;
- 30 eiZ Pn 01 39 18.2, iZ (Sg) 01 40 07.3, aftershock;
- 30 eiZ Pn 02 56 12.0, iZ 02 57 01.3, aftershock; ./.
- 30 iZ Pn 02 01 45.3, iZ Sg 02 02 34.4, iZ! 02 02 50.6, iZ 02 03 14.3, ./.. D= 330 km, aftershock;
- 30 eZ 04 19 21, eZ PP 04 19 40.3, iZ 04 19 52, iZ 04 20 06, USCGS:H= 04 01 32, 0, 122 E, Celebes;
- 30 Z 10 15-17 traces, explosion at Eschenlohe, W. Germany, 47°37.89'N, 11°08.80'E;
- 30 eiZ PKP 11 19 58.6, USCGS:H= 11 00 05, 16 S, 173 W, Tonga Islands region;
- 30 eiZ Pg 16 21 59.2, iZ Sg 16 22 14.4, iZ Sg Sg 16 22 21.0, D= 120 km, weak;
- 30 eZ PP 22 27 59; USCGS: H= 22 10 07, 6 S, 124 1/2 E, Banda Sea, h about 600 km;

May 1960

MAY 1960

- 1 eiZ Pn 01 32 19.9, eZ Pg 01 32 39.1, iZ! 01 32 56.0, eiZ Sn 01 33 13.0, eZ Sg 01 33 34; D= 475 km;
- 1 (e)Z 17 03 (35), eZ 17 04 49,;
- 1 eZ 18 11 51.2, eiZ! 18 11 57.9;
- 2 iZ P 01 08 44.1, USCGS: H= 01 00 00, 44 N, 84 1/2 E, Sinkiang Province, China;
- 2 eZ 01 31 18;
- 2 eZ 08 42 30; traces;
- 2 iZ 08 52 (00); eiZ 08 52 11.5;
- 2 iZ P or PKP 10 18 33.1, iZ 10 18 48.0;
- 2 eZ P 12 24 08, (e)Z 12 28 (00), eiZ PP 12 28 32.3, USCGS: H= 12 10 11, 0, 121 1/2 E, Celebes, D= 11 300 km;
- 2 eiZ P or PKP 18 10 20.5,;
- 2 Z 18 41-47 traces ;
- 3 eZ+ 05 36 18.1, eZ 05 37 42;
- 3 (e)Z 07 06 (00), traces, USCGS:H= 06 59 04, 29 1/2 N, 55 E, Iran, felt:Lar;
- 3 eZ P 08 05 59.1, USCGS: H= 07 55 07, 29 N, 99 1/2 E, China;
- 3 eZ 13 40 27 ;

May 1960

-5-

- 3 eiZ 14 11 55.6; seismic ?
- 3 eiZ P 22 35 17.9, USCGS: H= 22 22 41, 32 N, 140 E, h about 150 km, South of Honshu, Japan;
- 4 eZ PKP 00 16 22.7, iZ! 00 16 29.9!, USCGS: H= 23 57 37, 19 1/2 S, 178 1/2 W, Fiji Islands, h about 600 km.
- 4 iZ+ Pg 10 47 11.1, iZ Sg 10 47 31.2, D= 155 km;
- 4 eZ+ PKP₂ 18 49 31.9, (e)Z 18 51 31; USCGS: H= 18 29 40, 20 S, 173 E, Loyalty Islands region;
- 4 iZ (Sg) 19 50 26.0; near;
- 5 eiZ Pn 08 19 43.5, eZ (Sg) 08 21 22, eZ 08 21 39; (D= appr. 620 km, weak);
- 5 eiZ P 11 37 55.3, eiZ PcP 11 38 12.8, eZ 11 38 23, eiZ 11 38 48.3, USCGS: H= 11 26 00, 52 1/2 N, 158 1/2 E, Near east coast of Kamchatka, D= 8 500 km ;
- 6 iZ 02 11 13.1, near, weak;
- 6 iZ+ P 18 59 17.4, eZ (PcP) 18 59 30.7, eZ 18 59 39; USCGS: H= 18 47 26, 54 N, 161 E, Near east coast of Kamchatka;
- 6 (e)Z 23 15 (12) traces, eiZ 23 17 17.2, iZ 23 17 32.0,;
- 7 eiZ P 19 43 01.3, eZ 19 44 52;
- 8 (e)Z P 14 41 29.8, USCGS: H= 14 29 14, 45 1/2 N, 151 E, Kurile Islands;
- 9 eiZ+ P 00 23 41.3, USCGS: H= 00 11 10, 42 N, 113 E, Ryukyu Islands;
- 9 eZ P 14 46 54.9, USCGS: H= 14 36 27, 25 1/2 N, 89 1/2 E, East Pakistan-India border;
- 9 eZ P 16 37 14.9, USCGS: H= 16 27 26, 6 1/2 N, 33 1/2 W, Atlantic Ocean;
- 10 (e)Z P 23 30 11.4, traces, USCGS: H= 23 17 57, 34 N, 131 1/2 E, Near coast of western Honshu, Japan;
- 11 eiZ- Pn 13 25 47.0, iZ Pg 13 25 55.5, iZ 13 25 58.9, iZ X₁ 13 26 03.9, iZ (Sn) 13 26 19.3, iZ 13 26 22.3, iZ Sg 13 26 27.9, iZ! 13 26 38.8, iZ 13 26 42.2, iZ! 13 26 55.9,; BCIS: H= 13 25 00, 44.6 N, 11.2 E, Emilia, Italy, D= 290 km ;
- 11 Z(PKP) 18 54.6 traces, eZ 18 55 18.9, USCGS: H= 18 36 00, 3 S, 131 E, Ceram Sea, Mag.= 6 1/2 (Pas);
- 12 (e) Z 14 20 (25) traces;
- 12 Z 16 41-45 traces;
- 12 eiZ P 22 45 27.8, eiZ 22 46 04.6, USCGS: H= 22 32 32, 7 1/2 N, 81 W, Panama;
- 12 (e)Z 23 13.5 ; USCGS: H= 23 00 36, 7 1/2 N, 80 1/2 W, Near south coast of Panama;
- 13 Z 03 57.3, traces, eiZ Sg 03 58 28.5,; BCIS: H= 03 55 36, 48 1/2 N, 7.3 E, Bas Rhin;

May 1960

-6-

- 13 Z 11 04- 07 traces, weak;
- 13 eiZ+ P 16 19 20.2, eiZ! PcP 16 19 36.3!, eiZ PP 16 22 28.2, USCGS: H= 16 07 12, 55 N, 161 1/2 W, Alaska Peninsula, D= 8 750 km ;
- 13 Z 19 33-34 traces;
- 14 eiZ+ P 22 31 47.6, iZ 22 32 08.1, deep?, USCGS: H= 22 19 55, 53 1/2 N, 159 1/2 E, Kamchatka;
- 15 (e)Z P 13 42 54.2, USCGS: H= 13 30 20, 24 N, 121 1/2 E, Near east coast of Formosa;
- 15 (e)Z P 21 49 21.3, USCGS: H= 21 37 08, 54 1/2 N, 164 1/2 W, Alaska Peninsula;
- 16 Z 08 55-58 traces;
- 17 iZ (Sg) 06 41 17.6;
- 18 eZ+ P 06 47 41.0, eiZ pP 06 47 57.8, eiZ 06 49 41.3, USCGS: H= 06 35 09, 29 N, 130 E, h about 100 km, Ryukyu Islands, D= 9 600 km;
- 18 eiZ+ P 08 48 05.3, eiZ 08 48 26 ;
- 18 (e)Z 12 37 50, traces, near;
- 19 iZ+ P 02 14 46.3, iZ! 02 14 49.0!, eiZ pP 02 15 24.1, iZ PP 02 16 32.0, eZ 02 17 31, eiZ 02 20 17, USCGS: H= 02 07 00, 36 N, 71 E, h about 200 km, Hindu Kush, D= appr. 4 850 km;
- 19 eiZ P 10 24 11.4, iZ PcP 10 24 18.0, eiZ 10 24 45.5, USCGS: H= 10 11 51, 17 S, 66 E, Mascarene Islands region, D=appr. 9 100 km;
- 19 (e)Z 23 40 (49) traces, eiZ 23 42 50, eZ 23 44 04 ;
- 20 iZ+ P 04 21 24.8, iZ 04 21 33.2, iZ 04 21 42.1;
- 20 eZ PKP₁ 11 32 24.1, iZ! 11 32 34.3!, iZ PKP₂ 11 32 44.1, iZ 11 32 55, eiZ 11 33 19.6, eiZ PP 11 36 17, eiZ 11 37 17, USCGS: H= 11 12 31, 28 S, 167 1/2 E, Norfolk Islands, Mag.= 6 1/2- 6 3/4 (Pas), D= 16 900 km ;
- 21 eZ Pn 06 43 29.8, eiZ 06 43 47, eiZ 06 43 57.4, eZ 06 44 10, (e)Z (Sn) 06 45 19, eiZ 06 45 25, eiZ 06 45 43.5, eZ 06 46 56, USCGS: H= 06 41 10, 37 1/2 N, 21 E, Near west coast of Greece, D= appr. 1050 km ;
- 21 eiZ P 08 30 05.0, USCGS: H= 08 17 01, 15 1/2 N, 121 1/2 E, Luzon Island, Philippine Islands;
- 21 (e)Z 10 18 (10), (e)Z+ PKP 10 21 32, e ZE 10 22 23, iZNE + PP 10 22 34.3, iZ 10 22 44.0, iZ! 10 22 54, eiZ+ PPP 10 25 09.5, eNE SKS 10 28 26, eNE (PS) 10 32 27, ZNE M 11 20 - ; Tz=19 Az=250, Tn=19 An=690, Te=19 Ae= 700, F= 12 30 - appr. USCGS: H= 10 02 50, 37 1/2 S, 73 1/2 W, Near coast of Chile, Conception, Mag.= 7 1/4-7 1/2 (Berk), D=appr. 12 700 km;
- 21 eZ 13 19 27, eZ PP 13 19 39.5, traces, USCGS: H= 12 59 58, 37 1/2 S, 72 1/2 W, Chile;

May 1960

-7-

- 21 Z 13 39-41 traces;
- 21 Z 14 39-41 traces;
- 21 Z 14 43-44 traces;
- 21 eZ P or PKP 15 35 44.7, eZ 15 36 15 ;
- 21 eZ Pn 21 08 37.5, (e)Z (Sg) 21 10 08, iZ! 21 10 23.8!, (D= 570 km) ;
- 22 Z 01 18-21 traces;
- 22 Z 06 21-22 traces, USCGS: H= 06 01 36, 38 S, 73 1/2 W, Chile ;
- 22 (e)Z 10 49 (15), eiZ+ PP 10 50 19.0, eiZ+ PPP 10 52 50.1, USCGS: H= 10 30 39, 38 S, 73 1/2 W, Near coast of Chile, Mag.= 6 1/2 (Pas), 6 1/4 (Berk), D= 12 750 km ;
- 22 eZ+ PKP 10 51 33.7, eiZ+ NE PP 10 52 25.0, eZ PPP 10 54 47, eNE! 11 02 14, eM Z (NE) 11 42 :Tz=19, Az=25 ; USCGS: H= 10 32 43, 37 1/2 S, 73 W, Near coast of Chile, Mag.= 7 1/4-7 1/2 (Pas), 7 (Berk), D= 12 650 km ;
- 22 (e)Z PP 12 36 25, traces, USCGS: H= 12 16 43, 38 S, 73 W, Chile ;
- 22 (e)Z+ P 19 10 52 (weak), (e)Z PKP 19 14 44, eiZ+ NE PP 19 15 34.1, eZE SKS 19 21 29, eNE SP 19 25 24, eNE 19 31 (00), USCGS: H= 18 55 57, 38 S, 73 1/2 W, Near coast of Chile, Mag.= 7 3/4 (Berk) ;
- 22 eiZ+ PKP 19 30 09, eiZNE (PP) 19 30 (55), disturbed by the preceding earthquake, M 20 12 - : Tz= 19 Az = 425, Tn=19 An= 612, Te= 19 Ae= 1575 ; Mag.= 8 1/4-8 1/2 (Pas), 8 1/2 (Berk), USCGS: H= 19 11 20, 38 S, 73 1/2 W, Near coast of Chile, D= 12 750 km ;
- 23 iZ+ PP 00 45 32.2, eZ 00 48 39, USCGS: H= 00 25 44, 38 1/2 S, 75 W, Near coast of Chile ;
- 23 (e)Z PP 01 10 47, eZ 01 11 15, eZ 01 13 37, USCGS: H= 00 51 12, 37 1/2 S, 72 W, Chile ;
- 23 eZ (PP) 03 06 29.2, (e)Z 03 16 25, USCGS: H= 02 46 30, 41 1/2 S, 73 1/2 W, Southern Chile;
- 23 (e)Z PKP 05 32 19, eiZ PP 05 33 17.5, eiZ! 05 33 32.5!, eZ PPP 05 36 (00), USCGS: H= 05 13 35, 38 S, 73 1/2 W, Chile, D= 12 750 km ;
- 23 (e)Z 07 28 14.5, eZ PKP 07 28 21.5, eZ (PP) 07 29 46, eZ 07 29 57.3, USCGS: H= 07 09 17, 48 S, 77 W, Off coast of Chile ;
- 23 iZ 09 42 45.5, seismic?
- 23 Z 10 11-13 traces ;
- 23 eZ PP 10 58 06.5, eZ 11 06 04, USCGS: H= 10 37 59, 43 1/2 S, 73 1/2 W, Chile ;
- 23 Z 14 20-23 traces, weak, USCGS: H= 14 01 50, Near coast of Chile ;
- 24 iZPn 00 57 45.0, iZ 00 57 58.8, iZ Sg 00 58 36, D= 330 km;

May 1960

-8-

- 24 eiZ Pg 08 58 10.8, iZ (Sg) 08 58 43.0, aftershock, weak;
- 24 (e)Z PKP₁ 15 06 33.5, iZ 15 06 50.6, iZ PKP₂ 15 07 25.5, eZ PP 15 11 16, eZ 15 17 28, USCGS: H= 14 46 34, 44 1/2 S, 167 1/2 E, South Island, New Zealand, Mag.= 6 3/4 - 7 (Pas), 6 1/4- 6 1/2 (Berk); D= about 17 950 km;
- 24 eiZ PKP 20 51 42.0, USCGS: H= 20 32 43, 50 1/2 S, 74 W, Southern Chile, ;
- 25 eiZ PKP₁ 02 58 27.7, USCGS: H= 02 37 42, 44 S, 168 E, Near coast of South Island, New Zealand ;
- 25 Z 04 45-47 traces ;
- 25 (e)Z PKP 08 53 31.4, eZ PP 08 54 49.1, (ei)Z 08 55 (00), eZ PPP 08 57 35, USCGS: H= 08 34 33, 45 S, 76 W, Off coast of Chile, Mag.= 6 3/4 (Pas), 6 1/4- 6 1/2 (Berk), D= 13 360 km ;
- 25 (e)Z 10 33 42, traces ;
- 25 eZ 12 57 09, iZ 12 57 24.7, iZ 12 57 32.0 ;
- 26 iZ Pn 00 49 45.0, eiZ 00 50 16.4, eiZ 00 50 26.7, eZ Sn 00 51 07, eiZ Sb 00 51 25.9, eiZ (Sg) 00 51 59, D= 780 km;
- 26 eiZ Pn 00 56 29.3, eiZ 00 56 54, eiZ Sn 00 57 56.6, iZ! Sg 00 58 43.0, iZ 00 58 57.7, eZ 01 00 16, D= 820 km ;
- 26 eiZ+ Pn 05 11 57.8, continuation Z underexposed, iNE Pg 05 12 32, iNE (Sg) 05 14 09, iNE M 05 14 13, Z 05 14 - :Tzne=4.5, Az=37, Ae=57, An=52 ; BCIS: H= 05 10 11, 40.6 N, 20.6 E, Albania, USCGS: H=05 10 05, 40 N, 20 E, Albania-Greece border, Mag.= 6 1/2 (Pas), D= 780 km ;
- 26 iZ Pn 05 39 43.9, iZ Sn 05 41 06.8, iZ Sg 05 41 49.9, D= 780 km ; aftershock
- 26 Z 11 43-45 traces ;
- 26 Z 18 24-28 traces ;
- 26 eiZ P or PKP 18 17 07.2 ;
- 26 (e)Z Pn 18 33 58.5, eiZ (Sg) 18 36 (06), (D= 780 km) ;
- 26 iZ+ P 20 15 40.1, USCGS: H= 20 05 07, 27 N, 93 E, Eastern India ;
- 26 (e)Z 20 36 (08) traces, eiZ 20 38 36, iZ! 20 39 19.2, eiZ 20 39 45 ;
- 27 eiZ PKP 00 44 57.6, eZ 00 45 19, iZ ! 00 45 49.0, USCGS: H = 00 25 03, 22 S, 172 E, Loyalty Islands region;
- 28 Z 10 56-57 traces ;
- 28 iZ- Pg 16 18 13.3, iZ! Sg 16 18 28.8!, iZ 16 18 35.1, iZ 16 18 47.2, D= 120 km ;
- 28 Z 18 29-31 traces ;
- 28 (e)Z 19 25 (10), iZ 19 27 05.1, iZ 19 27 12.0, iZ 19 27 27.2, traces, weak;
- 29 eiZ Pn 02 07 44.0, iZ (Pg) 02 08 07.0, iZ 02 08 45.4, iZ Sg 02 09 33, iZ! 02 09 49.2!, D= 680 km ;

May 1960

-9-

- 29 (e)Z PKP 07 58 08, eZ PP 07 59 09, eZ PPP 08 01 31, USCGS : H= 07 39 29, 38S, 72 1/2 W, Chile, Mag.=6 1/2 (Pas), 6 1/4 (Berk), D= 12 650 km ;
- 29 iZ P 08 32 37.0, USCGS: H= 08 20 01, 25 1/2 N, 124 1/2E, Ryukyu Islands ;
- 29 eiZ Pg 23 33 50.3, iZ Sg 23 34 03.1, D= 100 km, weak;
- 30 eiZ Pg 13 31 50.5, iZ Sg 13 32 06.0, iZ 13 32 08.1, D= 125 km ;
- 30 eiZ Pn 21 26 51.6, iZ Pg 21 27 03.2, iZ Sn 21 27 31.9, iZ Sg 21 27 46.8, iZ! 21 27 54.0! , D= 368 km ;
- 31 eZ P or PKP 00 32 14.2, eZ 00 32 25.5, ;
- 31 (e)Z PKP 02 58 48.0, eZ PP 03 00 07.8, traces, USCGS: H= 02 40 00, 39 1/2 S, 75 W, Chile, Mag.= 6 (Berk);
- 31 eiZ PKP₁ 05 12 06.8, eZ 05 12 19.0, USCGS:H=04 52 28, 18 S, 168 1/2 E, New Hebrides Islands;
- 31 eZ Pn 09 08 40.2, iZ Pg 09 08 50.2, iZ! 09 08 57.7, iZ Sg 09 09 31.3, D= 343 km ;
- 31 eZ- P 11 13 17.9, eiZ 11 13 43, iZ 11 13 56.8, USCGS: Leeward Islands;
- 31 (e)Z P or PKP 11 41 (30), eiZ 11 41 39.0 ;
- 31 eZ P 11 53 14.3, USCGS: H= 11 42 19, 19 N, 61 1/2 W, Leeward Islands region ;
- 31 eiZ PKP 13 30 12.8, eZ 13 30 28.7, USCGS: H= 13 11 02, 7 1/2 S, 156 E, Solomon Islands ;
- 31 iZ+ P 21 13 18.0, USCGS : H= 21 00 40, 5 1/2 S, 109 1/2 E, Java Sea, h about 600 km ;

June 1960

JUNE 1960

- 2 eZ 04 02 44 traces ;
- 2 Z 04 28-32, traces ;
- 2 eZ PKP 06 16 56.4, (e)Z PP 06 18 (20), USCGS : H= 05 58 03, 46 1/2 S, 74 W, Southern Chile, Mag.= 6 3/4 (Pas),;
- 2 eiZ 07 29 39.8, USCGS: H= 07 22 30, 33 1/2 N, 60 E, Iran;
- 2 eiZ- PKP 07 38 53.6, eiZ 07 39 30.5, USCGS: H= 07 19 10, 19 S, 175 W, Tonga Islands, h about 150 km ;
- 2 eiZ+ PKP 08 06 15.2, USCGS: H= 07 47 11, 5 1/2 S, 151 1/2 E, New Britain, Mag.= 6 1/2- 6 3/4 (Pas) ;
- 2 (e)Z P or PKP 08 32 51, eiZ 08 32 56.3 ;
- 2 eiZ P 12 48 42.8, eZ 12 49 11, USCGS : H= 12 42 38, 33 1/2 N, 49 E, Iran ;
- 2 (e)Z+ P 18 18 50.2, USCGS: H= 18 07 51, 18 1/2 N, 61 W,

June 1960 -10-
(cont.) Leeward Islands region ;

2 eiZ PKP₁ 19 17 56.3, iZ! PKP₂ 19 18 03.3!, iZ 19 18 17.7, eiZ 19 20 16 ; USCGS:H= 18 59 05; 20 1/2 S, 178 1/2 W, Fiji Islands, h about 550 km ;

3 Z 06 32-38 traces ;

3 (e)Z PKP 07 57 18, USCGS :H= 07 38 14, 5 1/2 S, 151 E, New Britain ;

3 eiZ+ PKP 13 42 19.0, iZ! 13 42 25.2!, eiZ 13 42 51.5, eZ 13 43 26, eiZ! 13 44 45!, USCGS: H= 13 14 38, 17 1/2 S, 179 1/2 W, Fiji Islands, h about 600 km, Mag.= 6 (Pas);

3 eiZ 16 30 13.1, traces, ;

4 eiZ+ P 02 40 25.8, USCGS: H= 02 27 06, 20 N, 95 1/2 W, Near coast of Jalisco, Mexico, Mag.=6-6 1/4 (Pas);

4 (e)Z P or PKP 03 30 22.4, eiZ 03 30 42.8 ;

4 Z 06 04-08 traces ;

4 eZ P or PKP 08 16 19, traces ;

4 (e)Z P or PKP 19 51 (14) ;

6 eZ P 01 30 30.2, iZ 01 30 34.5, iZ (PcP) 01 30 41.8, iZ PP 01 33 53, USCGS: H= 01 17 48, 41 N, 125 W, Off coast of Northern California, Mag.= 5 1/2-5 3/4 (Berk);

6 eiZ PKP 06 14 39.5, eZ PP 06 15 43, (e)NE 06 16 (50), eNE L 06 38, M 07 11 - : Tz=18, Az= 32 ; USCGS:H= 05 55 44, 45 1/2 S, 73 1/2 W, Near coast of Chile, Mag.= 6 3/4 (Pas), 6 3/4-7 (Berk) ;

6 iZ Pg 08 59 08.2, iZ Sg 08 59 11.9, D= 22 km, weak ;

7 iZ 03 53 06, iZ 03 53 11.8, iZ 03 53 15, near, weak;

7 iZ P 06 09 07.6, iZ Sg 06 09 48.6, iZ! 06 09 57.9, D= 285 km ;

7 iZ+ P 13 09 06.8, eZ 13 09 20.9, USCGS: H= 12 57 15, 53 N, 158 1/2 E, Near east coast of Kamchatka ;

7 eZ P 15 43 31.1, eZ 15 43 40.7, iZ 15 43 57.7, USCGS:H= 15 34 50, 14 N, 57 E, Arabian Sea,;

8 Z 08 33-39 traces, weak ;

8 eiZ P or PKP 09 58 36.3, iZ 09 58 42.1 ;

8 Z 16 07-12 traces, weak ;

8 iZ- P 16 27 13.1, (e)Z 16 28 (00), eZ 16 28 52.5, USCGS: H=16 19 48, 35 N, 35 W, North Atlantic Ocean ;

8 Z 21 48.6- 51 traces ;

9 eZ-P 02 48 39.2, eZ 02 49 09.1, USCGS:H= 02 44 08, 39 1/2 N, 39 1/2 E, Eastern Turkey ;

9 iZ Pn 08 25 45.4, iZ(Pb) 08 25 58.8, iZ Pg 08 26 23.5, iZ 08 26 53.8, iZ Sn 08 27 12.3, iZ 08 27 24.2, iZ! 08 27 30.7, iZNE Sg 08 27 38.2, iZNE M 08 28 06, USCGS: H=08 24 00, Strait of Otranto, D= appr. 800 km ;

June 1960 -11-

10 Z 04 34-37 traces ;

10 iZ- PKP 09 27 50.3, USCGS: H= 09 08 02, 15 1/2 S, 174 W, Samoa Islands region ;

10 eiZ P or PKP 11 51 17.3 ;

10 Z 16 53 (00), eiZ 16 55 03.3, iZ 16 55 30.2, traces ;

10 (e)Z PKP 21 31 (52) disturbed by microseisms, USCGS:H= 21 12 05, 15 1/2 S, 174 W, Samoa Islands region, Mag.= 5 1/2 (Berk) ;

11 eZ PKP 15 33 19.3, iZ 15 33 28.4, eZ (PP) 15 35 37, Z 15 36 (00) ; USCGS:H= 15 14 07, 9 S, 152 1/2 E, D'Entrecasteaux Islands, Mag.= 6 (Berk), D=appr. 14 250 km;

11 eZ PKP 16 56 53.2, iZ 16 56 59.0, eZ 16 57 22.1, eZ (PP) 16 59 15, USCGS: H=16 37 40, 9 1/2 S, 152 1/2 E, D'Entrecasteaux Islands, (D= 14 300 km) ;

12 eZ PKP₁ 04 15 31, iZ PKP₂ 04 15 39.9, USCGS:H=03 56 44, 22 1/2 S, 179 E, South of Fiji Islands, h about 600 km;

12 iZ! P 07 18 29.2 ! ;

12 eZ 15 36 13, eZ 15 36 53, traces ;

12 eiZ Pn 23 12 28.1, eZ 23 15 22, eiZ 23 15 43.1,;

13 eiZ- P or PKP 14 18 53.3, ;

13 iZ+ Pg 16 13 06.8, eiZ Sg 16 13 09.5, iZPgPg 16 13 12.1, iZ 16 13 13.9, eiZ 16 13 16.1, eZ 16 13 21.2, timed limestone quarry blast of 2.4 tons of ammonal at Kresnice P.R.Slovenia, Coordinates: 46°06.7'N, 14°48.7'E, H=16 13 03.1, ± 0.1 sec), D=21.8 km ;

14 eZ P or PKP 23 57 23.0;

15 eiZ+ P 15 49 12.4, eiZ 15 49 25.5, eZ PP 15 52 31.2, USCGS: H= 15 36 51, 41 N, 142 1/2 E, Near north coast of Honshu, Japan, D= appr. 9 200 km ;

16 eiZ 10 31 05.6 ;

17 eiZ 00 18 09.6 ;

17 iZ PKP 05 21 19.6, iZ! 05 21 25.7 ;

17 iZ+(PKP₂) 16 47 57.3, eiZ 16 48 11.0 ;

18 eZ 12 46 42.2, ;

18 eZ P or PKP 23 45 43.8, ;

19 eiZ 02 32 58.4, eZ 02 33 54.5, ;

19 eZ Sb 03 37 49.0, eZ 03 38 57, BCIS:H= 03 35 14, 47.5N, 7.3 E, Jura Alsacien ;

19 eZ P or PKP 12 40 44.7, iZ 12 40 47.0, eZ (PP) 12 42 36;

19 eiZ+ P or PKP 17 30 38.7, (e)Z 17 34 (20) ;

20 (e)Z P 02 16 (16), (e)Z 02 19 (48), eZ 02 20 05, eZ 02 20 41.5, eZ(PP) 02 21 04.5, eZ (PPP) 02 23 36, M (ZNE) 03 23, Tzne=18, Az=25 ; USCGS:H= 02 01 08, 38 S, 73 1/2 W, Near coast of Chile, Mag.=7 (Pas), 7 1/2 (Berk), D=12 750 km ;

June 1960

-12-

- 20 (e)Z P 13 14 (40), eZ PKP 13 18 28.5, e! Z PP 13 19 26.0,
 (e)Z PPP 13 22 (00), M 14 11 -, Tz=16, Az=15, NE traces;
 USCGS:H=12 59 40, 39 1/2 S, 73 W, Chile, Mag.= 6 3/4
 (Pas), 7 (Berk), D= 12 800 km ;
- 21 eZ 21 53 04.7 traces ;
- 22 Z P 16 21 (00), iZ 16 21 19.6, USCGS:H= 16 12 00, 12 N,
 57 1/2 E, Arabian Sea ;
- 24 eiZ P or PKP 08 15 38.0, ;
- 24 Z P or PKP 15 48 (00) ;
- 25 eiZ- PKP 02 22 39.4, eiZ 02 22 56, eZ 02 23 25, USCGS:
 H=02 02 35, 30 1/2 S, 177 W, Kermadec Islands ;
- 25 eiZ P 14 06 07.8, eZ 14 07 09, USCGS:H= 13 53 37, 6 1/2
 N, 72 1/2 W, Colombia ;
- 25 eZ P or PKP 15 01 51.0, iZ 15 02 36.1, Z! 03 (00)! ;
- 25 eiZ Pg 17 15 44.1, iZ Sg 17 15 58, D= 115 km ;
- 25 iZ! 17 51 41.0! ;
- 26 iZ Pn 10 17 27.0, iZ Pg 10 17 40.1, iZ Sn 10 18 06.0,
 iZ Sg 10 18 24.3, iZ 10 18 36.6, D= 380 km ;
- 28 eZ-P or PKP 21 12 22.6, eZ 21 12 28.7 ;
- 29 eZ P or PKP 04 49 15.8, eiZ! 04 50 01.6, disturbed by
 microseisms;
- 29 eZ P or PKP 10 29 (00), eZ 10 29 20.5, disturbed by
 microseisms;
- 29 eiZ Pn 12 39 14.5, eZ 12 39 39.7, Z! 12 40 (00), eiZ(Sg)
 12 41 31.5, D=appr. 830 km ;
- 29 iZ- Pn 13 44 10.8, eiZ 13 44 26.7, iZ Pg 13 44 49.1, eiZ
 Sn 13 45 36.4, eiZ Sg 13 46 24.2, iZ! 13 46 39.5, (i)Z!
 13 47 (00), eiZ 13 47 20.6, ; D= 830 km ;
- 29 iZ+ Pg 14 59 57.6, iZ Sg 15 00 02.1, iZ PgPg 15 00 04.6,
 iZ! 15 00 09.5!, iZ 15 00 15.5, quarry blast at Kresnice
 as on June 13, 1960; D= 21.7 km ;
- 29 Z 17 19-21 traces, obscured by microseisms;
- 30 Z 05 24-25 traces, disturbed by strong microseisms;
- 30 eZ- P 20 10 04.8 ;

Ljubljana, July 20, 1960

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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 1960)



Geophysical Institute
 at the AG Observatory Golovec
 University of Ljubljana
 Trg revolucije 11
 Yugoslavia

1960

PRELIMINARY SEISMOLOGICAL BULLETIN
 from July 1, 1960 to September 30, 1960

Station Ljubljana : Coordinates : $46^{\circ} 2.6' N$ 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, 12 mm/min;

Constants:	T_0	$v: 1$	r/ T_0^2	V
N-S	4.9	2.6: 1	0.085	70
E-W	4.9	3.1: 1	0.084	67

Hiller -"Stuttgart"- vertical component Z - galvanometrical recording; $T_0 = 1.5$ sec., $T_1 = 1.5$ sec., $D_1 = D_2 = 1$, $V_{max} = 10$ 150, velocity of registration: 60 mm/min.

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

July

JULY 1960

- 1 (e)Z P 08 10 (45), eiZ 08 10 51, eZ 08 13 39.5, USCGS: H=07 58 58, 56 N, 165 E, Komandorskie Islands ;
- 1 iZ 20 09 11.3 ;
- 1 iZ! + Pg 23 13 27.3, iZ! Sg 23 13 31.4, D= 30 km, weak;
- 2 iZ+ Pg 04 12 05.2, iZ! Sg 04 12 07.6, D= 15 km, weak;
- 2 eZ+ PP 12 14 30.4, eZ 12 14 42.3, USCGS: H= 11 55 41, 56S, 27 W, Sandwich Islands ;
- 2 eiZ- P 12 55 19.3, USCGS: H=12 44 21, 41 N, 131 1/2 E, h about 550 km, Sea of Japan ;
- 3 eiZ- P 20 33 16.8, iZ 20 33 36.8, eiZ 20 34 43, iZ 20 35 14.2, eZ 20 36 09, eZ PP 20 36 30.6, eZ PPP 20 38 21, eZ S 20 43 31, eZ PS 20 44 13, eZ PPS 20 44 30, D= 9100 km; USCGS: H= 20 20 46, 50 1/2 N, 177 W, Andreanof Islands, Aleutian Islands, Mag.= 6 1/2 (Berk);
- 3 iZ P or PKP 21 58 29.4 -traces ;



July 1960

-2-

- 3 iZ- P 23 04 55.3, iZ 23 05 15.8, iZ 23 05 27.6, USCGS: H= 22 52 24, 50 1/2 N, 177 W, Andreanof Islands, Aleutian Islands;
- 4 iZ 03 50 13.5, traces ;
- 4 eZ P 04 40 36.3, eiZ 04 40 43.0, iZ 04 40 (00), iZ 04 41 04.5, eZ PP 04 43 27, eZ 04 44 31, eNE M 05 17 -, eZ LR 05 14 -:Tz = 19, Az = 10, USCGS: H= 04 28 33, 52 N, 131 1/2 W, Queen Charlotte Islands; Mag.= 6 1/2-6 3/4 (Pas), 6 1/2 (Berk), D= 8.550 km.
- 4 iZ 15 29 45.4, iZ 15 30 17.8 ;
- 5 (e)Z 11 03 21, traces ;
- 5 eiZ P 21 27 27.0, USCGS: H= 21 15 09, 8 S, 71 1/2 W, h about 600 km, Western Brazil;
- 5 (e)Z 22 13 (42), iZ (Sg) 22 13 54.0, traces, near ;
- 6 iZ+ P 05 24 25.2, eiZ pP 05 25 09.6, eZ PP 05 26 09.0, iZ! 05 29 44.1, USCGS: H= 05 16 44, 36 1/2 N, 70 1/2 E, h about 200 km, Hindu Kush region, D= 4.750 km.
- 6 eiZ Pn 23 30 26.7, eZ Sn 23 32 14, Athens: felt Zante Island, D= 1050 km.
- 7 Z 02 28-29 traces ;
- 7 eiZ Pg 12 48 07.4, iZ (Sg) 12 48 26.6, iZ 12 48 27.8, iZ 12 48 33.5, (D= 155 km) .
- 7 iZ Pn 18 47 32.2, iZ Pg 18 47 41.7, (e)Z (Sn) 18 48 (08), eZ Sg 18 48 23.0, D= 325 km .
- 7 eZ 22 25 41.9, eZ 22 25 50.7;
- 7 eiZ Pg 23 31 16.2, iZ Sg 23 31 29.5, iZ 23 31 36.7, D= 110 km.
- 7 Z 23 38-39 traces ;
- 8 eZ 06 26 47, eZ 06 27 02, eiZ 06 27 41 ;
- 8 eZ 06 32 40, traces ;
- 8 iZ! - Pg 08 23 03.7, iZ Pb 08 23 06.6, iZ! Sg 08 23 11.5, iZ 08 23 15.9, iZ! 08 23 17.9, D= 65 km.
- 8 eiZ Pg 12 52 08.4, iZ! Sg 12 52 24.5, iZ SgSg 12 52 28.6, D= 120 km.
- 8 iZ!+ P 13 03 53.0, iZ 13 04 15.2, P phase sharp beginning: Tz=1.0, Az=0.4, USCGS: H=12 51 21, 31N, 130 1/3 E, Near south coast of Kyushu, Japan .
- 9 iZ+ Pn 22 44 34.9, iZ Px 22 44 38.2, iZ Pb 22 44 50.1, iZ Pg 22 45 06.7, iZ Sn 22 46 04.4, iZ! Sg 22 46 47.0, eiZ 22 47 06.9; Tz= 1.9, Az= 0.6, iZ! 22 47 25.4, eiZ 22 47 53.2, USCGS: H= 22 42 50, 41 N, 21 E, Southern Yugoslavia, D= appr. 770 km.
- 10 Z P 00 18 (00) in the minute interruption, iZ 00 18 09.1, eiZ 00 18 25.9, eiZ 00 18 36.8, eiZ 00 19 12.7, eZ 00 20 13, eZ PP 00 21 14, eZ 00 22 18, eZ (S) 00

July 1960

-3-

- 10 (continuation:) 28 40, USCGS: H= 00 05 18, 0 , 98 E, Off west coast of Sumatra, D= 9.550 km.
- 10 iZ! Pg 08 01 16.8, iZ 08 01 18.0, iZ! Sg 08 01 20.2, iZ SgSg 08 01 23.2, D= 25 km.
- 10 iZ PP 13 56 25.7, USCGS: H= 13 39 55, 12 1/2 N, 86 W, Near coast of Nicaragua, felt:Managua, h about 150 km. From July 10, 18^h 36^m to July 11, 06^h 15^m no Z records.
- 11 (e)Z Pg 07 44 26, iZ Sg 07 44 44.3, D=appr. 150 km,weak.
- 11 eiZ PKP₁ 07 53 10.2, (e)Z 07 54 50, USCGS: H= 07 33 32, 54 S, 140 1/2 E, South of Australia .
- 11 eZ- PKP₁ 12 14 57.9, iZ-! PKP₂ 12 15 03.3; Tz=1.9, Az=1.2, eiZ 12 15 12.7, eiZ 12 15 45.3, eZ 12 16 20.2, eZ PP 12 18 38, USCGS: H= 11 55 10, 16 S, 172 W, Tonga Islands region, Mag.= 6 (Pas), 6 1/4- 6 1/2 (Berk), D = 16. 500 km.
- 11 iZ 13 09 42.9, iZ 13 09 46.5, iZ 13 09 48.3, traces, seismic?
- 12 iZ 00 49 15.0, eZ 00 49 03.4, traces, weak;
- 12 Z 02 09-10, traces;
- 12 eiZ Pn 14 08 33.3, iZ! Pg 14 08 41.7, eiZ Sn 14 09 09.2, iZ Sg 14 09 20.6, iZ 14 09 30.7, iZ! M 14 09 44.8!, D= appr. 320 km.
- 13 eiZ+ Pn 10 22 37.6, iZ 10 22 41.5, iZ 10 22 46.8, eiZ Sn 10 24 17.0, eZ 10 25 12.5, iZ! Sg 10 25 19.1, USCGS: H= 10 20 25 appr., felt:Chalcidice Peninsula, Athens: VI^o MCS Krini,Marathoussa; D= 980 km.
- 13 iZ Pn 13 03 08.2, iZ PgPg 13 03 45.7, iZ! 13 03 51.3!, iZ Sn 13 04 48.4, eiZ (Sb) 13 05 26, iZ! Sg 13 05 51.5!; Tz= 2, Az = 2, F= 13 18 - ; USCGS:H= 13 01 00, 41 N, 23 1/2 E, Greece.Minor damage on Chalcidice Peninsula. Athens: Mag.= 5 1/2, VIII^o MCS Krini,Marathoussa,macro-seismic surface: 87.000 km², D= 980 km.
- 13 Z 14 38-40 traces,
- 13 (e)Z 16 41 19, traces,
- 13 (e)Z 18 38 57, eiZ 18 39 40.7, eZ 18 40 25 ;
- 13 (e)Z 19 13 51.2, traces,
- 13 eZ 20 32 09.7, eZ 20 34 52,
- 13 Z 21 39- 42 traces ;
- 14 eiZ- Pg 04 18 05.0, iZ PgPg 04 18 08.6, iZ! Sg 04 18 22.5, iZNE 04 18 23.6, iNE M 04 18 29, iZ M 04 18 39, Strasbourg: H=04 17 51, 46.6 N, 12.8 E, Tolmezzo region, D= 140 km, strong.
- 14 eZ 08 15 26 ;
- 14 eZ 09 17 54, eZ 09 18 28. eiZ 09 19 09.2,
- 14 Z 09 41-43 traces ;

July 1960

-4-

- 14 eZ P 10 40 55.9, eZ PP 10 45 12.3, USCGS: H= 10 26 58, 5 N, 127 1/2 E, Molucca Passage, D= 11.300 km.
- 14 eZ PKP 11 03 52, eZ 11 04 18.5, eiZ 11 06 13.7, USCGS: H= 10 45 02, 23 1/2 S, 180, h about 600 km, South of Fiji Islands.
- 14 eZ P 18 47 45.4, USCGS: H= 18 39 34, 7 N, 38 1/2 E. Ethiopia.
- 14 eiZ- P 22 18 56.3, eiZ 22 19 25.0, USCGS: H= 22 11 06, 36 N, 70 E, h about 100 km. Hindu Kush.
- 15 eZ Pg 00 37 15.8, iZSg00 37 28.4! , D= 95 km.
- 15 eZ- P 05 12 42.3, eZ 05 12 50.2, USCGS: H= 05 02 05, 12 S, 45 1/2 E, Off northwest coast of Madagascar .
- 15 eZ 08 43 42.7, traces,
- 15 eiZ 20 43 32.3, traces,
No Z readings from July 15, 21^h 34^m to July 16, 06^h 24^m.
- 16 eZ 11 18 46.4, traces.
- 16 (e)Z 20 44 53,
- 16 eZ P 21 30 45, USCGS: H= 21 19 37, 65 1/2 N, 167 W, Seward Peninsula, Alaska.
- 16 (e)Z 22 42 35, traces;
- 17 eiZ 00 09 55.2, seismic?
- 17 eZ P 05 22 33.3, USCGS: H= 05 14 56, 36 N, 69 E, h about 200 km, Hindu Kush .
- 17 eiZ 09 14 04.3, traces,
- 17 eiZ 09 53 34.0, traces.
- 17 eZ 10 38 35.9, traces,
- 17 iZ P 12 01 41.7, traces, USCGS: H= 11 50 15, 10 1/2 N, 62 W, Near coast of Venezuela, felt: Trinidad; h about 100 km.
- 17 eiZ 16 35 53.4, traces,
- 17 iZ 19 40 54, eI 19 41 14.3, traces.
- 17 eZ P 19 52 54.2, USCGS: H= 19 42 38, 10 S, 13 W, Ascension Island region.
- 18 (e)Z 00 06 20, traces.
- 18 (e)Z 00 43 04.2, eZ 00 43 51, eZ 00 44 25, eZ 00 45 20, traces.
- 18 iZ- P 01 05 54.2, USCGS: H= 00 53 (54) Nicobar Islands.
- 18 eZ- P 01 27 15.3, eiZ 01 27 22.7, USCGS: H= 01 15 (07), Nicobar Islands.
- 18 eiZ 01 55 55.6, Z 01 56 (00),
- 18 Z PKP 02 01 (00), disturbed by the following near earthquake, USCGS: H= 01 43 29, 4 1/2 S, 151 E, h about 200 km, New Britain region, felt.

July 1960

-5-

- 18 eZ Pn 02 02 04.1, iZ Pg 02 02 17.1, iZ Sg 02 03 04, D= 390 km.
- 18 Z Pn 04 08 (00), iZ Pg 04 08 13.0, iZ Sn 04 08 42.6, iZ! 04 08 52.6!, iZ Sg 04 08 59.0, iZ! 04 09 10.2, D = 390 km.
- 18 (e)Z 04 17 26, traces,
- 18 (e)Z 08 05 15, traces, eZ 08 06 25, iZ 08 06 47.9 .
- 18 eZ Pn 08 50 37.9, iZ Pg 08 50 49.7, eZ(Sg) 08 51 32, iZ 08 51 47.9, D= appr. 370 km. weak.
- 18 eZ P 16 59 34.4, traces, USCGS: H= 16 51 41, 37 1/2 N, 70 1/2 E, Hindu Kush.
- 18 Z P 19 01 (00) in the minute interruption, eZ PcP 19 01 37.5, eZ PP 19 03 21, USCGS: H= 18 50 32, 7 S, 51 1/2 E, Amirante Islands. D= 6900 km.
- 19 (e)Z (P) 04 32 56, eZ 04 33 16, traces, USCGS: H= 04 19 14, 7 S, 80 W, Near coast of Peru.
- 19 (e)Z Pn 13 52 47, eZ Sg 13 53 23, D= 260 km.
- 19 eZ 16 16 49.2, USCGS: H= 16 03 18, 16 1/2 N, 92 1/2 W, h about 200 km, Chiapas, Mexico.
- 19 Z 18 29-30, traces.
- 19 eZ Pn 23 29 47.5, iZ Sn 23 30 27.3, eiZ Sg 23 30 43.1, eiZ 23 31 12, D= 360 km.
- 20 eZ Pn 00 04 42.0, iZ Pg 00 04 51.9, iZ Sn 00 05 20.3, eiZ Sg 00 05 37.1, eiZ 00 06 04.7, D= 360 km.
- 20 (e)Z P or PKP 03 00 20.9, iZ+! 03 00 27.1!, eZ 03 00 35.8, From July 20, 05^h33^m to July 20, 06^h25^m no Z records.
- 20 eiZ Pn 09 21 14.5, eiZ 09 21 35, eiZ Sn 09 23 03.3, iZ 09 23 24.2, iZ 09 24 20, D= 1050 km.
- 20 eZ- P 09 42 50.4, iZ! 09 43 08.4, USCGS: H= 09 30 38, 49 N, 157 1/2 E, Kurile Islands region.
- 20 (e)Z Pn 17 30 47, eZ Sn 17 32 23, eiZ 17 32 47, eiZ 17 33 05, iZ 17 33 38.9, D= 930 km.
- 20 eZ- PKP₁ 21 18 49.9, iZ PKP₂ 21 18 53.1, eZ 21 19 24.5, eiZ 21 19 40.8, eZ 21 19 50.8, USCGS: H= 20 59 25, 20 1/2 S, 169 E, h about 200 km. New Hebrides Islands.
- 20 eZ 22 03 44.8, traces.
- 20 (e)Z 22 47 34, traces.
- 20 eZ Pn 23 10 43.1, iZ Pg 23 10 57.3, iZ Sn 23 11 30.3, iZ Sg 23 11 51.4, D= 430 km.
- 20 eiZ 23 25 19.4, traces.
- 20 Z 23 56-59 traces.
- 21 eZ 00 30 29.3, iZ 00 30 32.4, traces.
- 21 eiZ 01 47 17.6, traces.

July 1960

-6-

- 21 (e)Z 09 53 03, traces.
- 21 Z 10 54 (00), iZ (Sg) 10 54 06.0, near, traces.
- 21 iZ (Sg) 11 14 29.2, traces.
- 21 eiZ 16 01 10, near, traces.
- 21 iZ Pg 18 13 40.2, iZ Sg 18 13 53.0, iZ SgSg 18 13 58.9, D= 100 km.
- 21 iZ (Sg) 18 18 58.
- 21 eiZ Pg 18 55 35.3, iZ 18 55 42.5, iZ! Sg 18 55 47.2, iZNE! 18 55 53.7! D= 100 km. Felt: Rijeka (III^o-IV^oMCS) (45°20'N, 14°20'E) Earthquake swarm at Kvarner Bay, Adriatic Sea.
- 21 iZ (Sg) 19 18 48
- 21 iZ 19 59 41.6, traces, near.
- 21 iZ Pg 20 09 58.0, iZ Sg 20 10 11.1, iZ 20 10 15.2, D= 100 km, aftershock.
- 21 iZ Pg 21 13 47.5, iZ Sg 21 14 (00), D= 100 km, aftershock.
- 21 iZ Sg 22 21 22, aftershock,
- 21 iZ Sg 23 24 57.5, aftershock,
- 22 iZ Pg 01 51 35.7, iZ Sg 01 51 47.5, D= 100 km, aftershock.
- 22 iZ Sg 02 06 40.8, aftershock.
- 22 Z 02 14-15, traces.
- July 22: from 13^h51^m to 17^h55^m no Z records.
- 23 eZ 00 43 50.7, traces.
- 23 eiZ- PKP 07 50 32.4, USCGS: H= 07 31 38, 21 1/2 S, 179 1/2 W, h about 600 km, Fiji Islands.
- 23 (e)Z 08 01 56 ;
- 23 eZ Pn 20 42 25.3, iZ Pg 20 42 36.6, iZ Sn 20 43 05.2, iZ 20 43 13.2, eiZ Sg 20 43 21.7, D= 370 km, weak.
- 23 (e)Z Pn 22 37 (45), iZ Pg 22 37 56.4, iZ Sg 22 38 40.3, D= 370 km, aftershock, disturbed by the microseisms.
- 24 (e)Z P 10 00 39, traces disturbrd by microseisms, USCGS: H=09 48 56, 56 N, 164 E, Near coast of Kamchatka.
- 24 eZ 13 03 20.2, traces, near.
- 24 eZ Pn 14 18 10.6, iZ Pg 14 18 23.7, iZ Sg 14 19 06.5, eiZ 14 19 22.1, D= 380 km, weak.
- 24 eiZ Sg 14 40 14, aftershock of the previous.
- 24 Z 17 44-47, traces, near.
- 24 iZ Pn 21 32 46.6, iZ Pg 21 32 56.4, eZ Sn 21 33 20.5, iZ Sg 21 33 32.6, D= appr. 320 km.
- 25 eZ+ P 03 52 51.1, iZ 03 53 05.0, eiZ 03 53 44.1, eZ PP 03 55 39, USCGS: H= 03 41 05, 55 N, 163 E, Near coast of Kamchatka, Mag.=6 1/2 (Pas), 5 3/4-6 (Berk), D=8.450 km.

July 1960

-7-

- 25 Z 05 46-49, traces, near
- 25 eiZ+ (P) 05 52 28.6, traces
- 25 eZ- PKP 10 45 54.6, traces, USCGS: H= 10 27 00, 17 1/2 S, 178 W, Fiji Islands, h about 500 km.
- 25 eiZ- P 11 23 40.9, iZNE! 11 23 43.3, iZ pP 11 24 11.8, iZ sP 11 24 34.1, iZ 11 24 44.8, eiZ PP 11 26 23.7, iZ sPP 11 27 16.9, eZ PPP 11 28 15.7, eZNE S 11 33 15, USCGS: H=11 12 00, 54 N, 159 E, h about 100 km, Kamchatka, Mag.= 6 3/4 (Berk), 7 (Pas), D= 8.550 km.
- 25 eZ- P 15 42 14.4, traces, USCGS: H= 15 30 36.6, 53.4 N, 159.4 E, h about 152 km, Near coast of Kamchatka.
- 25 eZ+ P 21 18 40, USCGS: H= 21 11 36, 32 N, 56 1/2 E, Iran.
- 26 eiZ+ P or PKP 02 29 11.5, traces.
- 26 (e)Z 04 07 (19), eZ 04 08 20, eiZ 04 09 41.3 .
- 26 eZ 08 15 40.7, traces.
- 26 eZ P 12 40 22.8, eZ PP 12 40 36.5, iZ 12 40 47.9, eiZ 12 41 31.5, eiZ 12 42 19.1, USCGS: H= 12 36 20, 40 1/2 N, 37 E, Turkey. D= 1900 km.
- 26 Z 17 16 - 20, traces
- 26 (e)Z 22 53 14.7, iZ 22 53 17.2, traces.
- 27 Z 05 14-19 traces.
- 27 eiZ+ P 09 09 32.6, iZ 09 09 47.9, eZ 09 10 20.2, USCGS: H=08 56 22.9, 5.6 S, 103.6 E, h about 93 km, Near coast of Sumatra.
- 27 eZ PP 10 25 11, eZ 10 27 53, disturbed by microseisms. USCGS: H= 10 04 53.0, 44.7 S, 75.1 W, h about 25 km, Near coast of southern Chile, Mag.= 6 1/4-6 1/2 (Pas), 6 (Berk).
- 27 Z Pn 12 34 (00), iZ Pg 12 34 07.3, iZ 12 34 17.7, iZ! 12 34 24.6!, iZ Sg 12 34 41.8, iZ (SgSg) 12 34 48.1, D= 290 km.
- 27 iZ PKP 13 46 57.2, iZ 13 47 07.7, eiZ 13 47 17.8, USCGS: H= 13 27 20.2, 19.5S, 167.8 E, h about 55 km, New Hebrides Islands.
- 28 iZ- PKP(1) 01 38 47.7, iZ PKP(2) 01 38 56.7, sharp phases, disturbed by microseisms.
- 29 eZ PKP 00 43 52.8, iZ 00 44 02.9, iZ 00 44 10.6, iZ 00 48 25, USCGS: H= 00 24 06, 19 1/2 S, 170 1/2 E, Loyalty Islands, Mag.= 6 1/2-6 3/4 (Pas), 6 1/4- 6 1/2 (Berk).
- 29 eiZ- P or PKP 02 10 11.5, iZ 02 10 17.8, traces.
- 29 eiZ P 10 53 07.4, iZ 10 53 11.5, eiZ PcP 10 53 26.8, USCGS: H= 10 42 44.6, 26.9 N, 90.3 E, h about 11 km, India.
- 29 Z 12 04 (00), eZ 12 04 23.5, traces, near.
- 29 (e)Z 13 45 16.5, traces.

July 1960

-8-

- 29 (e)Z 14 19 36, eiZ 14 19 46.0, eiZ 14 19 57.9.
- 29 iZ- P 14 41 43.1, iZ 14 41 52.0, eiZ 14 42 36.8, USCGS: H= 14 33 46.1, 31.7N, 67.0 E, h about 64 km, Eastern Pakistan. Felt: Quetta, Pakistan.
- 29 eiZ P or PKP 15 47 47.0, traces.
- 29 eiZ P 16 52 41.9, USCGS: H= 16 45 49.3, 28.0 N, 54.6 E, h about 159 km. Southern Iran.
- 29 iZ+ P 17 43 57.2, iZ! 17 44 01.5, iZ pP 17 44 12.6, iZ sP 17 44 21.8, iZ 17 44 48.0, eiZ PP 17 47 13.0, iZ pPP 17 47 29.8, Z PPP 17 49 (OO), eiZ pPPP 17 49 16.5, eZ SP 17 54 56.5, Z LR 18 24 - : Tz=14, Az= 25, ZNE (M) 18 25 - . USCGS: H= 17 31 39.5, 40.1 N, 142.3 E, h about 50 km, Honshu, Japan. Mag.= 6 3/4 (Pas), 6 3/4 -7 (Berk), D= 9.150 km.
- 29 eZ 22 14 39.9, traces.
- 30 eiZ 06 42 29.7, traces.
- 30 (e)Z 15 16 09.0, traces.
- 31 iZ PKP 03 14 44.1, eiZ 03 14 51.3, eZ PP 03 16 30, eZ 03 16 47.5, eZ 03 18 21, eZ (PPP) 03 19 18, NE (M) 03 58 - traces, USCGS: H= 02 55 46.2, 5.6 S, 150.0 E, h about 25 km. New Britain, Mag.= 6 3/4 (Pas), 6 - 6 1/4 (Berk), D= appr. 13. 800 km.
- 31 Z 03 27-29 traces.
- 31 eZ+ PKP 07 23 30.0, traces, USCGS: H= 07 04 37.1, 6.0 S, 150.0 E, h about 93 km. New Britain Island. Felt. Mag.= 6 (Pas).
- 31 Z 08 02-03 traces.
- 31 eZ (PKP) 13 17 08.1, eZ 13 17 18.9, traces.
- 31 eZ PP 15 15 12, traces. USCGS: H= 14 55 03.3, 43.6 S, 74.3 W, h about 97 km, Near coast of central Chile.
- 31 Z 18 01-04, traces, near.
- 31 eiZ 21 27 23.9, seismic ?
- 31 eiZ+ P 22 33 57.7, eiZ PP 22 35 20.4.

August

AUGUST 1960

- 1 (e)Z 00 00 22, traces.
- 1 eiZ+ P 02 27 47.3, iZ 02 28 15.2, iZ 02 28 24.9, iZ 02 28 41.5, eiZ PP 02 29 15.0, USCGS: H= 02 20 52.4, 27.9 N, 54.2 E, h about 110 km, Southern Iran, D= 4.000 km.
- 1 iZ 05 27 25.0, near, traces.
- 1 (e) Z P 12 52 56, traces, USCGS: H= 12 40 23.6, 40.1 N, 142.0 E, h about 98 km, Near north coast of Honshu, Japan.

August 1960

-9-

- 1 eiZ P 15 29 16.6, traces, USCGS: H= 15 16 54.9, 3.7 N, 98.0 E, h about 25 km, Near coast of Sumatra.
- 2 eiZ+ PKP₁ 05 26 57.9, iZ! 05 27 03.4!, iZ! 05 27 10.9, iZ 05 27 30.0, eZ 05 28 57, eZ (PP) 05 30 39.5, USCGS: 05 07 22.1, 22.2 S, 171.5 E, h about 108 km, Loyalty Islands. Mag.= 6 1/2 (Pas), 6 1/4 (Berk).
- 2 (e)Z 09 50 24, eiZ PKP₂ 09 51 04.3, USCGS: H= 09 30 26.5, 28.2 S, 176.6 W, h about 61 km, Kermadec Islands.
- 2 eiZ P 18 42 45.2, eZ 18 44 48.6, eiZ (S) 18 45 06.6, (D= 1400 km).
- 2 eiZ P 20 58 27.4, iZ 20 58 33.9, USCGS: H= 20 51 03.8, 84.2 N, 2.3 E, h about 40 km, North Polar region.
- 3 eiZ - P or PKP 02 38 33.2, traces.
- 3 eiZ 07 21 44.6, traces.
- 3 iZ 20 44 14.7, traces, near, weak.
- 3 eiZ PKP 22 00 20.7.
- 4 eZ P 07 47 08, eiZ 07 48 42.6, eZ (PP) 07 50 33, USCGS: H= 07 34 53.8, 51.4 N, 179.1 E, h about 83 km, Rat Islands, Aleutian Islands, Mag.= 6 - 6 1/4 (Pas), D = appr. 9.150 km.
- 4 eiZ P or PKP 13 16 16.9, traces.
- 4 (e)Z P or PKP 13 39 40, traces.
- 4 (e)Z 15 47 22, traces.
- 5 Z 04 03-04 traces.
- 5 eiZ Pn 07 19 53.5, eZ (Sn) 07 21 32.2, eiZ 07 21 58.0, D= appr. 940 km, weak.
- 5 eiZ P or PKP 08 38 41.2, traces.
- 5 (e)Z 08 52 (15), (e)Z 08 53 55, eiZ 08 54 17.3.
- 5 eiZ+ P or PKP 14 57 35.3,
- 5 eiZ P or PKP 16 18 35.3.
- 5 (ei)Z Pn 18 35 56.9, eiZ Pg 18 36 07.9, eiZ (S) 18 36 30.6, iZ Sg 18 36 52.3, D= 365 km.
- 6 Z 03 28-30, traces, near.
- 6 eZ (Pn) 14 43 27.5, eiZ Sg 14 44 22.7, iZ! 14 44 33.5!, (D= 365 km).
- 6 eZ 21 49 19, traces.
- 7 iZ Pn 02 08 07.5, iZ 02 08 57.9, iZ Sg 02 09 02.3, iZ SgSg 02 09 10.2, iZ 02 09 21.7, D= 365 km.
- 7 (e)Z 15 50 09.5, traces.
- 8 (e)Z 03 47 32.3, eiZ (Sg) 03 47 51.6, weak.
- 8 (e)Z Pn 05 46 14.6, iZ Pg 05 46 18.9, iZ PpPg 05 46 21.5, iZ X₁ 05 46 27.4, iZ Sn 05 46 42.9, iZ! Sg 05 46 48.6!, Iz SgSg 05 46 52.5, iZ! 05 46 58.5!, D= 245 km.

August 1960

-10-

- 8 eZ P 12 36 06.0, USCGS: H= 12 28 10.2, 12.0 N, 44.4 E, h about 24 km. Gulf of Aden.
- 8 eZ P 15 43 45.6, eiZ 15 43 52.4, USCGS: H= 15 34 26.8, 1.9 S, 11.1 W, h about 60 km, South Atlantic Ocean.
- 8 eiZ P 20 39 43.6, eiZ PP 20 39 57.0, iZ 20 40 07.1, iZ sP 20 40 18.1, iZ 20 40 27, eZ 20 43 10, USCGS: H= 20 36 28.4, 36.0 N, 27.3 E, h about 87 km, Dodecanese Islands, D= 1.540 km.
- 9 eZ PKP₁ 17 06 16.8, iZ PKP₂ 17 06 50.4, USCGS: H = 16 46 37.7, 24.5 S, 177.1 W, h about 186 km, Tonga Islands region, Mag.= 6-6 1/4 (Pas), 6 1/4 (Berk).
- 9 eZ 22 06 15.5, traces.
- 9 Z 23 49-53, traces.
- 9 eiZ 23 56 22.3, traces.
- 10 eZ+ Pn 13 03 50.7, eiZ Sg 13 04 38.4, Z! 13 05 (00), D= appr. 320 km.
- 10 (e)Z 17 17 (44), traces.
- 11 Z 03 11-13 traces.
- 11 eiZ Pn 03 19 55.3, eiZ Sg 03 20 29.4, very weak, D = appr. 245 km.
- 11 Z P 05 04 (00), traces, USCGS: H= 04 50 33.9, 8.8 N, 126.1 E, h about 79 km, Mindanao, Philippine Islands.
- 11 Z 19 59 - 20 01 - , traces.
- 11 (e)Z 22 02 15, traces,
- 12 iZ+ P 13 25 04.7, iZ 13 25 18.2, USCGS: H= 13 12 34.3, 36.1 N, 141.4 E, h about 95 km, Near east coast of Honshu, Japan.
- 13 iZ+ P 07 23 22.5, disturbed by strong microseisms, iZ 07 23 35.3, eiZ 07 26 10, eZ PP 07 26 37, eiZ 07 26 50.2, USCGS: H= 07 11 05.5, 40.6 N, 142.0 E, h about 60 km, Near east coast of Honshu, Japan, D=appr.9.240 km.
- 13 eiZ 14 33 38.9, eiZ PP 14 34 43.7, eZ PPP 14 37 23, iZ 14 44 09, eZ SP 14 44 36, USCGS: H= 14 14 57.7, 39.7 S, 74.8 W, h about 61 km, Near coast of southern Chile. D= appr. 12.950 km.
- 14 iZ P 12 55 18.3, iZ PP 12 55 30.5, iZ S 12 57 14.9, iZ SS 12 57 30.0, iZ 12 57 44.8, D= 1.150 km. Athens: felt in Arkadie (Peloponnisos).
- 14 Z P 22 45 (00) in the minute interruption, USCGS: H= 22 37 11.9, 36.0 N, 69.3 E, h about 69 km, Hindu Kush.
- 15 (e)Z 00 49 24.6, traces.
- 15 iZ 04 34 04.0, eiZ 04 34 16.7, traces, weak.
- 15 eZ+ P 07 10 45.0, eZ 07 11 06, USCGS: H= 06 58 56.4, 13.4 S, 65.8 E, h about 15 km, Indian Ocean.
- 15 eZ+ P 14 45 23.1, traces, USCGS: H= 14 33 38.4, 13.5 S,

August 1960

-11-

- 15 (continuation:) 67.0 E, h about 25 km, Indian Ocean.
- 15 iZ Pn 21 12 15.7, (e)Z Sn 21 13 45, eiZ 21 14 06.5, eiZ 21 14 19.9, eZ (Sg) 21 14 31.2, D= appr. 860 km, weak.
- 16 (e)Z 00 25 24, Z 00 27 (00), traces.
- 16 eiZ- P 10 42 03.3, USCGS: H= 10 31 03.1, 3.6 S, 68.7 E, h about 60 km, Chagos Archipelago region.
- 16 Z 20 06-09 traces, very weak.
- 17 eiZ P 09 44 51.5, USCGS: H= 09 33 49.1, 20.1 S, 11.4 W, h about 87 km, South Atlantic Ocean.
- 17 eiZ- P 11 35 17.1, USCGS: H= 11 24 07.2, 19.8 S, 12.2 W, h about 25 km, South Atlantic Ocean.
- 17 (e)Z(P)15 29 (53), eiZ SgSg 15 31 26.5, Strasbourg: H= 15 28.1, 49 1/2 N, 7 E, felt: Rhénanie and Sarre.
- 17 eiZ P or PKP 17 36 09.2, traces.
- 18 Z 04 30-32, traces.
- 18 iZ Pg 05 31 44.5, iZ Sg 05 31 46.1, iZ 05 31 46.8, D= 15 km, weak, not felt.
- 18 eiZ P 20 59 15.9, USCGS: H= 20 47 02.5, 44.5 N, 147.6 E, h about 32 km, Kurile Islands.
- 18 eZ Pn 23 38 04.3, eiZ 23 38 11.2, eiZ 23 38 16.3, eZ Pb 23 38 25, eiZ 23 38 53.5, eZ (Sn) 23 39 33, eZ Sg 23 40 14, eZ 23 40 37, Tz=2.2, Az= 0.3, D= appr. 870 km, (corr.), Athens: felt in Jannina region (Greece).
- 20 eZ P 20 21 13.4, eZ 20 21 22.9, eZ 20 21 58, USCGS: H= 20 08 39.0, 35.6 S, 15.4 W, h about 37 km, Tristan da Cunha region.
- 20 eZ 21 32 34.0, traces.
- 20 eZ PP 22 40 45.8, eZ 22 41 09.5, traces, USCGS: H= 22 22 44.6, 0.5 N, 122.0 E, h about 59 km, Northern Celebes.
- 21 eiZ+ PKP 00 36 50.6, iZ 00 37 15.1, eZ PP 00 38 19.4, USCGS: H= 00 18 01.5, 4.3 S, 143.E, h about 39 km, New Guinea, D= 13.280 km.
- 21 eZ 01 18 06.6, traces.
- 21 eZ P 03 39 19.3, traces, USCGS: H= 03 29 11.8, 26.4 N, 88.6 E, h about 81 km, Nepal-India border.
- 21 eiZ P 13 03 05.0, eZ PP 13 07 17.8, USCGS: H= 12 49 37.6, 4.9 N, 125.1 E, h about 211 km, Near south coast of Mindanao, Philippine Islands, D= appr. 11.150 km.
- 21 eiZ PKP₁ 17 40 44.5, eiZ PKP₂ 17 41 03.1, USCGS: H= 17 20 54.9, 15.3 S, 176.0 W, h about 24 km, Fiji Islands region.
- 21 eiZ Pn 20 51 03.0, eiZ Pg 20 51 14.6, eiZ Sg 20 51 49.7, Z 20 52 (00), D= 315 km, weak.
- 22 eZ 13 47 07.7, traces.

August 1960

-12-

- 23 eZ+ P 09 05 38.2, eZ 09 05 54.1, eZ PP 09 07 14.3, USCGS: H= 08 58 12.1, 29.0 N, 59.9 E, h about 116 km, Southeastern Iran.
- 23 eiZ+ P 14 18 05.8, eZ PP 14 20 11.2, USCGS : H= 14 08 14.9, 0.9 N, 26.0 W, h about 25 km, Atlantic Ocean, D= appr. 6.300 km.
- 23 eZ 15 23 46.0, traces.
- 23 eZ 21 49 23.2, traces.
- 23 Z 21 59- 22 01 - traces.
- 23 eZ PKP 23 04 31.5, eiZ 23 04 36.8, eiZ 23 04 44.9, eiZ 23 04 53.5, USCGS: H = 22 44 51.5, 14.5 S, 176.4 W, h about 56 km, Fiji Islands region, Mag.= 6 (Pas).
- 24 (e)Z 01 55 (50) traces, Z P 01 56 (00), weak, USCGS: H= 01 44 09.9, 56.9 N, 163.8 E, h about 25 km, Near east coast of Kamchatka.
- 24 eZ PKP 06 08 51.9, iZ! 06 08 58.7!, USCGS : H = 05 49 01.1, 19.0 S, 174.1 W, h about 42 km, Tonga Islands.
- 24 eZ P 07 25 14.8, eZ S 07 26 47, eiZ SS 07 27 (00), eiZ 07 27 04.7, D= 970 km, Athens: felt Karditsa,... (Greece).
- 24 eiZ+ P 19 38 30.5, eiZ 19 38 56.7, USCGS : H = 19 27 53.2, 24.4 N, 95.0 E, h about 145 km, Burma-India border.
- 25 (e)Z Pg 09 48 26.8, iZ Sg 09 48 42.0, very weak. D= 130 km, felt: Zagreb -Yugoslavia.
- 25 eZ+ P 17 54 15.1, traces, USCGS : H = 17 41 58.8, 52.7 N, 169.6 W, h about 38 km, Fox Islands, Aleutian Isl.
- 26 eZ 07 17 51.9, traces.
- 26 eZ PKP 09 53 34.3, traces.
- 26 (e)Z Pg 13 02 (45), very weak, Z Sg 13 03 (00), D= appr. 120 km.
- 26 eZ 18 46 34.6 (very weak), eZ PKP 18 46 42.5, eZ 18 46 53.2, eZ PP 18 49 35.7, USCGS : H = 18 27 18.2, 13.5 S, 165.9 E, h about 56 km, New Hebrides Islands, D= appr. 15.450 km.
- 26 eZ 21 03 32.6.
- 27 eZ 02 02 23.7.
- 27 (e)Z P 10 20 44, eZ S 10 23 32, USCGS : H = 10 17 18.1, 34.4 N, 26.3 E, h about 40 km, Crete. D= 1.650 km, weak.
- 27 eiZ Pg 11 13 51.6, iZ! 11 13 55.3, eiZ Sg 11 14 08.9, iZ 11 14 16.2, iZ! 11 14 27.8!. D= 147 km.
- From August 27, 13^h 18^m to August 28, 07^h 14^m no Z records.
- 28 (e)Z 10 43 06.7, traces, near, iZ 10 43 14.7 ;

August 1960

-13-

- 28 eiZ Pn 23 59 45.2, iZ Pg 23 59 49.6, iZ! Sg 00 00 12.7, iZ 00 00 16.9, iZ 00 00 19.8, D= 200 km.
- 28 (e) Z 08 37 (52) eZ Sg 08 38 44.2.
- 30 eZ 15 31 44, eZ 15 32 21, traces, near.
- 31 Z P 22 16 (00), USCGS : H = 22 11 53.9, 39.1 N, 36.3 E, h about 44 km, Turkey.

September

SEPTEMBER 1960

- 1 (e)Z PKP 07 54 32.5, eZ 07 55 09.7, USCGS : H = 07 35 21.9, 27.6 S, 176.9 W, h about 500 km, Tonga Islands region.
- 1 eiZ PKP 09 47 47.6, eiZ 09 47 56.1, eZ PP 09 51 (00), eiZ 09 51 32.5, USCGS : H = 09 28 19.5, 16.8 S, 167.6 E, h about 27 km, New Hebrides Islands. Mag.= 6 (Pas.), D= appr. 16.000 km.
- 1 eiZ- PKP 10 54 33.8, eiZ 10 54 41.8, eiZ 10 56 26.6, eZ PP 10 57 44, eiZ 10 58 22.6, USCGS : H = 10 35 01.1, 16.5 S, 167.6 E, h about 27 km, New Hebrides Islands, Mag.= 6 (Pas), D = appr. 16.000 km.
- 1 eiZ Pn 11 06 52.4, eZ Sg 11 08 30, D= appr. 625 km, weak.
- 1 eZ- PKP 11 34 29.3, USCGS : H = 11 14 59.6, 16.6 S, 167.4 E, h about 35 km, New Hebrides Islands.
- 1 eZ+ P 15 49 16.4, eZ PP 15 52 05 eiZ 15 52 36.2, USCGS : H = 15 37 14.4, 56.1 N, 153.7 W, h about 24 km, Kodiak Island, Alaska. Mag.= 6 - 6 1/4 (Pas.).
- 1 eiZ 16 29 53.8, traces.
- 1 iZ- PKP 19 00 56.1, Z 19 01 (00), USCGS : H = 18 41 16.2, 15.8 S, 179.2 E, h about 33 km, Fiji Islands.
- 1 eZ+ PKP 20 21 40.1, eiZ 20 21 54.7, USCGS : H = 20 02 12.8, 16.1 S, 179.6 W, h about 183 km. Fiji Islands.
- 2 eZ 03 15 15.4, traces.
- 2 eiZ 05 41 35.0, traces.
- 2 eiZ PKP 11 11 36.7, eiZ 11 12 24.3, iZ 11 15 05.1, USCGS : H = 10 52 18.2, 15.2 S, 167.4 E, h about 163 km, New Hebrides Islands. Felt: Santo.
- 2 eZ P 13 56 53.2, traces, USCGS : H = 13 46 10.0, 28.7 N, 98.3 E, h about 48 km. Tibet.
- 2 eZ Pn 15 42 27.5, iZ Pg 15 42 38.6, eZ Sg 15 43 20, eZ Sg Sg 15 43 25, iZ! 15 43 33.0!. D = 350 km.
- 2 eiZ 18 53 17.6, traces.
- 2 eZ P 22 15 07.1, traces, USCGS : H = 22 02 48.9, 52.0 N,

September 1960

-14-

- 2 (continuation:) 171.4 W, h about 49 km, Fox Islands, Aleutian Islands, Mag.= 5 3/4 - 6 (Pas).
- 3 eZ+ P or PKP 00 05 06.1
- 3 eZ PKP 06 01 37.6, eiZ 06 01 47.7, traces, USCGS: H = 05 41 39.9, 20.9 S, 174.4 W, h about 61 km, Tonga Islands.
- 3 (e)Z 12 59 47.8 (weak traces), (e)Z 12 59 51.5, iZ+ PKP 12 59 51.9, iZ 13 00 01.1, iZ 13 00 08.3, eiZ PP 13 01 50.7, iZ 13 02 49.5, eiZ PKS 13 03 13.4, eZ PPP 13 04 32, USCGS : H = 12 41 34.9, 6.1 S, 154.5 E, h about 457 km, Solomon Islands. Felt at Karoola and Rabaul. Mag.= 6 1/2 - 6 3/4 (Pas), D = 14. 150 km.
- 3 eiZ+ P 13 35 09.9, traces, USCGS : H = 13 22 53.7, 40.9 N, 142.5 E, h about 112 km, Near north coast of Honshu, Japan.
- 3 (e)Z (PKP₁) 15 36 10.7, iZ PKP 15 36 17.5, USCGS : H = 15 17 28.4, 20.1 S, 178.6 W, h about 645 km, Fiji Islands.
- 3 Z 16 43-46, traces, near.
- 3 eiZ P or PKP 17 16 20.2, traces.
- 3 eiZ P or PKP 19 49 48.2, traces.
- 3 eiZ+ P 23 58 41.1, iZ 23 58 57.4, eiZ 23 59 25.6, USCGS : H = 23 46 23.9, 44.6 N, 149.1 E, h about 27 km, Kurile Islands, Mag.= 6 1/4 (Pas).
- 4 eiZ PKP 02 58 53.5, traces, USCGS : H = 02 39 03.6, 21.5 S, 170.4 E, h about 60 km, Loyalty Islands.
- 4 eiZ 21 54 54.7, eZ 21 56 19.7, eZ 21 56 47.3, traces, disturbed by microseisms.
- 5 eZ P 21 35 01.8, eZ 21 35 16.7, eZ (S) 21 36 38.9, (i)Z 21 37 (00), (D = appr. 930 km), weak.
- 5 (e)Z P 22 12 11, eZ S 22 13 50.5, iZ 22 14 15.6, (D = appr. 950 km), weak.
- 6 eZ 13 15 17.6, eZ 13 17 20.8, obscured by microseisms.
- 6 iZ PKP 14 22 40, iZ! 14 22 50.3!, disturbed by microseisms, USCGS : H = 14 03 01.8, 20.4 S, 169.4 E, h about 35 km, Loyalty Islands, Mag.= 6 1/4 - 6 1/2 (Pas) .
- 6 iZ+ P 15 36 47.8, traces, USCGS : H = 15 24 40.5, 41.9 N, 142.5 E, h about 109 km, Near south coast of Hokkaido, Japan.
- 7 Z 05 41-42 traces.
- 7 eiZ 08 36 24.5 .
- 7 eiZ- P 11 57 10.9, traces, USCGS : H = 11 44 56.6, 44.3 N, 149.1 E, h about 89 km, Kurile Islands.
- 8 eiZ 10 54 39.5 .

September 1960

-15-

- 8 eZ+ P 11 21 24.0, traces, USCGS : H = 11 07 40.8, 6.2 N, 126.2 E, h about 47 km, Near east coast of Mindanao, Philippine Islands.
- 8 eiZ+ P 14 43 53.2, USCGS : H = 14 32 00.3, 52.5 N, 158.8 E, h about 29 km, Kamchatka.
- 9 iZ+ Pn 05 03 49.2, iZ Pg 05 03 58.6, iZ! X₁ 05 04 12.4, iZ Sg 05 04 38.1, iZ! 05 04 51.4!, iZ 05 05 05, iZ 05 05 10.6, D= 330 km.
- 9 eiZ- P 10 13 05.7, USCGS:H = 10 05 21.9, 36.4 N, 71.6 E, h about 236 km, Hindu Kush.
- 9 eiZ Pn 10 44 04.6, iZ Sg 10 44 53.3, iZ 10 45 17.9, D= 330 km, aftershock, weak.
- 9 iZ Pn 21 29 28.6, iZ Pg 21 29 38.5, iZ PgPg 21 29 41.9, eiZ Sg 21 30 18.0, iZ! 21 30 48.8!, iZ 21 30 59.5, D= 330 km.
- 10 (e)Z 00 22 05.5, traces.
- 10 (e)Z P 00 22 38.4, iZ PP 00 22 51.1, iZ 00 23 48.5, iZ 00 23 56.2, iZ 00 24 13.4, eiZ S 00 25 25.4, eZ SS 00 25 44.3, eZ M 00 29 30: Tz=7, Az= 3, USCGS : H = 00 19 08.4, 34.4 N, 26.4 E, h about 10 km, Crete, D = 1.640 km.
- 10 eZ P 10 57 34, eZ (PP) 11 01 50, USCGS : H = 10 44 51.2, 4.0 N, 122.6 E, h about 629 km, Celebes Sea.
- 10 iZ- Pn 12 44 33.9, eiZ Pg 12 44 42.1, eZ Sn 12 45 08, iZ Sg 12 45 24, iZ 12 45 44.2, iZ! 12 45 52!, D= 320 km.
- 10 eiZ P 15 57 22.9, traces, USCGS : H = 15 45 22.6, 6.6 N, 93.8 E, h about 29 km, Nicobar Islands.
- 11 (e)Z 01 47 12, eiZ 01 48 53.1, eiZ 01 49 11.9.
- 11 eZ 06 06 30.9, iZ! 06 07 20.8! .
- 11 eiZ- Pg 14 39 17.7, iZSg14 39 32.8, D = 120 km.
- 11 eiZ 17 57 37, traces.
- 12 eiZ+ P 12 29 46.2, USCGS : H = 12 17 08.1, 27.3 N, 128.4 E, h about 48 km, Ryukyu Islands, Mag.= 6 1/2-6 3/4 (Pas).
- 13 iZ- P 03 21 34.1, USCGS : H = 03 09 09.7, 27.0 N, 140.2 E, h about 439 km, Bonin Islands region.
- 13 eZ Pn 11 28 42, eiZ 11 28 58, iZ Sg 11 29 14.1, eiZ 11 29 25, D = appr. 230 km, weak.
- 13 eZ Pn 19 52 15, eiZ Sg 19 53 42.5, D = appr. 560 km.
- 13 eiZ - Pg 21 14 43.6, iZ! Sg 21 14 59.3!, D = 127 km.
- 14 eiZ P 00 47 23.5, USCGS : H = 00 34 25.3, 16.9 N, 122.3 E, h about 50 km, Luzon, Philippine Islands.
- 14 Z 01 01 (00) in the minute interruption, eiZ (S) 01 02 43, iZ 01 03 06.2 .
- 14 eiZ 04 01 52.8, traces.

September 1960

-16-

- 14 Z 05 03-05, traces.
- 14 iZ Pn 15 28 53.8, eiZ 15 29 07.5, iZ Sn 15 30 35.1, iZ 15 30 58.2, eZ 15 32 12, D= appr. 980 km. Athens: felt at Cephalonia Island.
- 14 eiZ PKP 16 43 04.5, USCGS : H = 16 24 12.8, 17.5 S, 178.9 W, h about 562 km, Fiji Islands region.
- 14 eiZ PKP 23 38 30.1, iZ 23 38 38.4, USCGS : H = 23 18 35.1, 20.9 S, 174.1 W, h about 25 km, Tonga Islands.
- 15 eZ+ P 18 10 42.3, eZ PP 18 14 47.4, USCGS : H = 17 57 42.5, 21.4 N, 142.9 E, h about 361 km, Volcano Islands region.
- 16 iZ Pn 01 16 57.3, iZ Sg 01 17 44.1, D= 315 km.
- 16 eiZ P 01 31 31.1, traces.
- 16 eiZ P 01 46 35.4, USCGS : H = 01 39 03.3, 38.5 N, 68.7 E, h about 88 km, Tadzhik SSR.
- 17 eiZ+ P 08 04 54.2, iZ PcP 08 05 04.5, eZ 08 05 20, USCGS : H = 07 52 50.8, 49.3 N, 155.4 E, h about 35 km, Kurile Islands, D = appr. 8.700 km.
- 17 iZ+ P 08 17 34.1, iZ PcP 08 17 45.7, eiZ 08 17 58.4, USCGS : H = 08 05 29.5, 49.4 N, 155.2 E, h about 28 km, Kurile Islands, Mag.= 6 (Pas), D = appr. 8.700 km.
- 17 iZ+ Pg 11 31 35.7, iZ! Sg 11 31 38.8!, D = 22 km, Explosion, weak.
- 17 eZ (PKP) 20 16 03, iZ 20 16 10.7, USCGS : H = 19 56 11.1, 20.9 S, 174.5 W, h about 28 km, Tonga Islands, Mag.= 6 (Pas).
- 18 eiZ PP 09 59 37.4, eZ! 09 59 47!, traces, USCGS : H = 09 40 28.3, 6.8 S, 129.2 E, h about 83 km, Banda Sea.
- 18 Z 20 06-08 traces.
- 19 iZ+ P 19 14 07.1, iZ 19 14 16.8, eiZ 19 14 31.2, USCGS : H = 19 01 25.4, 6.9 N, 77.5 W, h about 66 km, Colombia-Panama border, Mag.= 6 - 6 1/4 (Berk), 6 (Pas).
- 20 eiZ P 04 14 34.2, USCGS : H = 04 05 56.9, 49.9 N, 88.4 E, h about 29 km, USSR.
- 21 iZ- P 16 20 26.5, USCGS : H = 16 08 14.7, 26.5 N, 124.8 E, h about 207 km, East China Sea.
- 22 eiZ P 05 47 15.9, eZ PP 05 49 14, iZ 05 51 09.3, eZ 05 56 26, USCGS : H = 05 38 14.4, 3.4 S, 29.1 E, h about 29 km. Congo. Damage at Usumbura, Uvira. D = 5.700 km.
- 22 iZ - P 09 14 39.0, eiZ PP 09 16 43.2, iZ 09 17 57.5, iZ 09 18 46.9, eNE (M) 09 40 - ; USCGS : H = 09 05 36.8, 3.3 S, 29.3 E, h about 28 km, Congo. Mag.= 6 1/4 - 6 1/2 (Pal), D = 5.680 km.
- 22 iZ P 09 23 56.8, eZ PP 09 25 57, D = appr. 5.700 km.
- 22 eiZ P 22 59 27.0, USCGS : H = 22 47 00.6, 51.5 N, 168.8 W, h about 33 km, Fox Islands, Aleutian Islands.

September 1960

-17-

- 22 iZ P or PKP 23 56 48.5, traces.
- 23 Z P or PKP 00 31 (00) in the minute interruption.
- 23 iZ 20 20 46.2, eZ 20 21 08.2, traces.
- 23 eiZ PKP 23 22 21.2, iZ 23 22 46.6, USCGS : H = 23 02 24.3, 22.2 S, 174.8 W, h about 39 km, Tonga Islands. Mag.= 5 3/4 (Pal).
- 24 eZ PKP 14 36 33, traces, USCGS : H = 14 16 52.4, 15.1 S, 176.1 W, h about 92 km, Tonga Islands.
- 24 iZ Pg 14 44 44.9, iZ Sg 14 45 01.6, D= 133 km.
- 25 iZ P 08 43 19.7, iZ 08 43 27.9, traces, USCGS : H = 08 36 27.6, 28.2 N, 53.2 E, h about 53 km, Southern Iran.
- 25 iZ+ PKP₁ 15 59 10.9, iZ PKP₂ 15 59 20.0, eiZ 15 59 40.2, eZ 16 02 04, eZ PP 16 02 34, USCGS : H = 15 39 27.4, 17.3 S, 173.4 W, h about 132 km, Tonga Islands region, D = 16.750 km.
- 26 iZ- P or PKP 03 50 28.7.
- 26 eiZ P or PKP 21 30 05.1.
- 27 iZ+ Pn 12 35 45.2, iZ Pb 12 35 50.2, iZ Pg 12 35 54.8, iZ! X₁ 12 36 04.6!, iZ X₂ 12 36 14.2, iZ Sn 12 36 19.7, iZ! Sg 12 36 33.7!, iZ 12 36 49.5!, D = 325 km.
- 28 iZ Pn 17 23 54.5, iZ Pg 17 24 03.4, iZ Sn 17 24 33.9, iZ Sg 17 24 43.7, D = 330 km.
- 28 iZ Pn 20 46 44.7, iZ! Pg 20 46 51.7, iZ! X₂ 20 47 05.5, iZ Sn 20 47 17.2, iZ! Sg 20 47 28.4!, D = 295 km.
- 28 eiZ Pn 22 25 16.3, eiZ Sn 22 26 44.9, iZ 22 27 10.8, eiZ (Sg) 22 27 34.9, D = 880 km. Athens: felt Corfu Island.
- 29 eiZ Pn 01 19 05.6, iZ Sg 01 19 45.6, weak, D = 280 km.
- 29 eiZ P 11 31 56.5, eZ PP 11 31 56.5, eZ PP 11 36 13.9, eZ L 11 44 30, USCGS : H = 11 18 52.9, 18.9 N, 144.7 E, h about 469 km, Mariana Islands, Mag.= 6 (Berk), 6 1/4 - 6 1/2 (Pas). D = 11.200 km.

Ljubljana, October 31, 1960

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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 1960)

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

1960

PRELIMINARY SEISMOLOGICAL BULLETIN
from October 1, 1960 to December 31, 1960

Station Ljubljana : Coordinates : $46^{\circ} 2.6'$ 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:	T_0	v	r/T_0^2	V
N-S	4.8	2.7:1	0.005	68
E-W	4.9	3.0:1	0.008	65

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.

October

OCTOBER 1960

- 1 iZ P 03 11 39.2, traces, USCGS: H = 03 00 50.2, 23.3 N, 94.6 E, h about 67 km, Burma -
- 1 iZ P 05 33 53.6, eiZ 05 34 14.1, iZ 05 35 30.7, eiZ S 05 36 21.7, eiZ 05 36 48.4 - USCGS: H= 05 30 38.1, 35.4 N, 26.2 E, h about 36 km, near Crete, BCIS: H= 05 30 35, 35 1/2 N, 26 1/2 E, Aegean Sea, NE of Crete, Athens: felt Crete(V^0 at St. Nicolas), D= 1490 km. -
- 1 iZ+ P 16 23 18.1, iZ 16 23 21.0, iZ PcP 16 23 27.7, eiZ 16 23 35.9, eZ 16 24 19 - USCGS: H= 16 10 56.9, 52.2 N, 172.6 W, h about 41 km, Fox Islands, Aleutian Islands, Mag.= 6 (Berk), 6 1/2 (Pas) -
- 2 Z 12 14-16 traces, USCGS: Pacific Ocean, SE of Easter Island -
- 2 iZ 16 47 42.4, traces -

October 1960

-2-

- 2 iZ+ P 18 19 19.9, iZ! PcP 18 19 36.8, USCGS: H= 18 08 12.4, 18.6 N, 94.9 E, h about 104 km, Burma, D= 7760 km.
- 3 eZ P 00 57 24.0, traces, USCGS: H= 00 49 11.8, 29.8 N, 68.2 E, h about 36 km, West Pakistan -
- 3 eiZ P 02 45 56.5, USCGS : H = 02 33 28.3, 36.8 N, 140.1 E, h about 60 km, Honshu, Japan- felt: Tokyo, Japan -
- 3 eiZ PKP 17 29 59.3, USCGS : H= 17 10 56.2, 8.1 S, 152.8 E, h about 100 km, D'Entrecasteaux Islands -
- 3 eiZ+ P 20 04 01.1, traces, USCGS: H= 19 50 48.8, 05.7 S, 103.0 E, h about 51 km, Off coast of Sumatra -
- 3 Z 22 30-31 traces -
- 4 iZ Pg 00 21 24.1, iZ Sg 00 21 30.3, D= 40 km, weak -
- 4 eiZ Pn 08 02 31.3, Z 08 03 (00), eZ 08 03 55, traces, irregular -
- 4 Z 10 10-12 traces -
- 4 (e)Z (Pg) 12 40 59.5 -
- 4 eZ (Pn) 21 02 49, eZ 21 03 34 -
- 6 eZ P 16 28 58.2, USCGS : H= 16 19 15.4, 52.2 N, 107.2 E, h about 46 km, Lake Baikal region -
- 6 eiZ P 20 01 54.0, Z 20 03 (00), disturbed by microseisms, USCGS: H= 19 55 42.2, 58.2 N, 31.6 W, h about 63 km, North Atlantic Ocean - BCIS: H= 19 55 34, 57 1/2 N, 33 1/2 W, North Atlantic Ocean, SW of Island -
- 7 eZ P 03 21 47.1, eZ 03 22 21.9, USCGS: H= 03 15 34.9, 58.1 N, 31.9 W, North Atlantic Ocean, Mag.= 4 1/2 - 4 3/4 (Pal) -
- 7 (e)Z P 15 33 30, eZ 15 33 36.3, iZ PKP 15 37 09.3, iZ 15 37 27.5, iZ PP 15 38 05.9, iZ! 15 38 14.6!, eiZ PPP 15 40 24.5, eiZ 15 40 40.9, USCGS : H = 15 18 30.8, 7.4 S, 130.7 E, h about 45 km, Banda Sea, Mag.= 6 1/2 - 6 3/4 (Berk), 6 3/4 - 7 (Pal), D= 12620 km -
- 8 iZ- P 06 03 54.9, iZ! 06 03 58.5, iZ pP 06 06 06.8, iZ! PP 06 07 02.5, iZ! 06 07 30.1, iZ 06 08 35.1, iZ pPP 06 08 46.8, eiZ S 06 12 49, eZ PS 06 13 32 - USCGS : H = 05 53 01.1, 40.0 N, 129.7 E, h about 608 km, Sea of Japan, Mag.= 6 1/2 - 6 3/4 (Pas), 6 1/4 - 6 1/2 (Berk), D = 8 630 km -
- 8 iZ+ Pn 13 55 17.7, iZ Pg 13 55 38.3, eiZ Sn 13 56 15.5, iZ 13 56 35.2, iZ Sg 13 56 41.4, iZ M 13 57 12.1, USCGS: H= 13 54 03.3, 42.7 N, 19.6 E, h about 24 km, Yugoslavia, D= 560 km -
- 8 eZ+ P 20 51 52.3, iZ 20 51 54.4, iZ 20 52 08.4, USCGS: H= 20 40 06.6, 7.9 N, 92.9 E, h about 84 km, Nicobar Islands -
- 9 eZ+ P or PKP 02 07 43.5, iZ 02 07 51.5 -
- 9 iZ- P 09 12 45.8, iZ 09 12 55.5, iZ pP 09 13 11.7, iZ sP 09 13 30.3, iZ! 09 13 54.0, eiZ PP 09 15 57.2, iZ

October 1960

-3-

- 9 (cont.) PPP 09 17 43.6, (e)Z S 09 22 48, USCGS: H = 09 00 42.0, 40.8 N, 141.2 E, h about 155 km, Near coast of northern Honshu, Japan. Felt. Mag.= 6 1/4 (Pas), 6 (Pal), D= 9130 km-
- 9 eiZ+ PKP₁ 10 10 53.5, iZ! PKP₂ 10 10 57.6, iZ! 10 11 25.2, USCGS: H= 09 51 19.1, 15.1 S, 174.0 W, h about 129 km, Samoa Islands region. Felt: Apia -D= 16500 km-
- 12 eZ Pn 06 53 28.5, eiZ Sn 06 54 49.2, iZ 06 55 06.2, eiZ 06 55 55.4, D= 760 km -
- 12 eZ P 10 39 06.6, eZ PP 10 39 15.2, eZ (PgPg) 10 39 40.6, eZ 10 40 53, iZ 10 41 11.1, eiZ 10 41 16.3, eZ! 10 42 26, D= 1050 km -
- 13 iZ+ PgPg 02 23 24.6, iZ 02 23 31.0, Z SgSg 02 25 (00), traces, USCGS: H= 02 21 12.7, 45.2 N, 25.8 E, h about 63 km, Romania -
- 13 iZ!- Pg 07 05 32.9, iZ Sg 07 05 38.8, D= 35 km, weak -
- 13 iZ+ P 15 04 20.2, iZ! 15 04 23.4, eiZ! 15 04 36.3, eZ (PP) 15 06 56, USCGS : H = 14 52 34.7, 54.8 N, 161.2 E, h about 35 km, Kamchatka, Mag.= 6 3/4 (Pas), 6 1/4 - 6 1/2 (Berk) -
- 13 iZ Pg 23 14 57.7, iZ Sg 23 15 26.8, D= appr. 220 km -
- 14 eiZ+ P 21 31 33.2, iZ PcP 21 31 37.8, eiZ 21 31 45.1, eZ PP 21 34 34, USCGS : H= 21 19 11.4, 51.7 N, 172.1 W, h about 50 km, Fox Islands, Aleutian Islands, Mag.= 6 1/2 (Pas), (Berk), (Pal) - D= 9150 km -
- 14 eZ P 23 02 08 (disturbed by microseisms), iZ 23 02 20.5, iZ (PPP) 23 03 27.5, USCGS : H = 22 55 41.7, 55.5 N, 35.2 W, North Atlantic, D= appr. 3550 km -
- 15 (e)Z P 02 00 30, obscured by microseisms, USCGS : H= 01 54 09.2, 55.6 N, 35.6 W, h about 37 km, North Atlantic Ocean -
- 16 From 07 40 to 13 15 no Z records -
- 16 eiZ P or PKP 17 17 29.6 -
- 17 iZ P 15 58 25.1, iZ pP 15 58 41.3, iZ 15 58 45.5, USCGS : H= 15 45 36.9, 4.8 N, 78.4 W, h about 83 km, Off coast of Colombia - Mag.= 4 3/4 (Pal) - D= about 9 800 km -
- 17 eZ P 18 13 46.5, traces, USCGS : H = 18 05 32.7, 30.7 N, 40.4 W, h about 65 km, Atlantic Ocean -
- 17 eZ P 19 10 31.0, eiZ 19 10 41.9, USCGS : H = 19 02 20.9, 31.7 N, 40.7 W, h about 47 km, Atlantic Ocean -
- 17 iZ PKP 22 52 33.1, USCGS : H = 22 33 32.3, 18.8 S, 177.6 W, h about 491 km, Fiji Islands region -
- 18 eZ PKP₁ 00 19 45.1, iZ PKP₂ 00 20 15.9, USCGS : H = 00 00 56.7, 25.3 S, 178.4 E, h about 636 km, South of Fiji Islands -
- 18 eZ 11 12 20, iZ 11 12 27.0, eiZ 11 12 46.5, traces -

October 1960

-4-

- 18 eZ Sg 11 48 01.2, eZ 11 48 15, traces -
- 19 (e)Z PKP 07 28 04, USCGS : H = 07 09 12.7, 20.0 S, 179.9 W, h about 608 km, Fiji Islands region -
- 20 eZ (Pn) 10 30 31.5, eiZ Sg 10 31 16.8, (D= 420 km) -
- 20 eiZ PKP 11 25 21.3, iZ 11 25 41.4, (e)Z PP 11 28 11, eZ SKP 11 28 55.5, USCGS : H = 11 05 58.3, 11 S, 164.9 E, h about 40 km, Santa Cruz Islands region- Mag.= 6 1/4 (Pas), 5 1/2- 6 (Berk), D= 15 190 km -
- 22 eZ PKP 08 41 11.6, eiZ 08 41 32.1, eiZ 08 41 50.8, (e) Z PP 08 43 56.0, eZ SKP 08 44 36.4, USCGS : H = 08 22 00.9, 10.3 S, 161.2 E, h about 93 km, Salomon Islands region, Mag.= 6 1/2 (Berk), 6 3/4- 7 (Pas), 6 (Pal), D= about 14 500 km -
- 22 eiZ P or PKP 16 47 25.9, traces -
- 22 iZ Pn 19 18 57.1, iZ Pg 19 19 14.6, iZ (PgPgPg) 19 19 26.9, iZ Sn 19 19 49.8, iZ (Sb) 19 20 09.3, iZ Sg 19 20 19.1, iZ M 19 20 29, USCGS : H= 19 17 47.2, 45.4 N, 20.9 E, h about 60 km, Hungaria-Romania border ; BCIS: H= 19 17 50, 46.1 N, 21.0 E, Border region Romania-Hungaria, west of Arad - D= 520 km -
- 23 eZ P 06 40 36.4, eiZ 06 40 47.9, traces, USCGS : H = 06 32 24.9, 31.2 N, 40.7 W, h about 61 km, Atlantic Ocean -
- 23 eZ Pn 19 23 17, eZ 19 25 06, traces -
- 24 eiZ PKP 05 31 18.7, eiZ! 05 31 24.6, eiZ 05 31 58.9, USCGS : H = 05 12 04.4, 15.0 S, 167.4 E, h about 145 km, New Hebrides region -
- 24 eiZ Pn 15 47 27.7, iZ Pg 15 47 40.0, eZ Sg 15 48 29.2, D= 400 km, weak -
- 26 (e)Z 11 27 23, eiZ 11 27 48.2, traces, -
- 26 iZ Pn 12 31 34.1, iZ PgPg 12 31 35.8, iZ! 12 31 39.6, iZ Sg 12 31 53.5, D= 160 km -
- 26 Z 15 04-08, traces -
- 26 eZ Pn 22 57 08.3, eiZ Sn 22 58 53.4, eZ (Sg) 22 59 35, eZ 23 00 04.5, eiZ 23 00 13.5, USCGS : H = 22 55 25.1, 40.3 N, 20.8 E, h about 61 km, Greece - Athens: felt Jannina, Konitsa, D= 880 km -
- 27 eZ- PKP₁ 22 47 11.8, iZ! PKP₂ 22 47 15.3, iZ 22 47 18.6, iZ pPKP₁ 22 47 19.8, USCGS : H = 22 27 55.1, 15.2 S, 175.0 W, h about 253 km, Samoa Islands, D= 16 450 km -
- 28 eiZ (Pn) 03 37 29.4, eiZ 03 39 15.5, traces -
- 28 eZ+ P 04 24 31.4, iZ PP 04 25 28, eZ 04 28 26.5, eZ S 04 29 12, USCGS : H = 04 18 41.9, 71.3 N, 8.6 W, h about 48 km, Jan Mayen Island, Mag.= 5 1/2 (Pal), 6 3/4 (Pas), BCIS: H= 04 18 50, Bergen: 71 N, 6 W, Arctic Ocean, east of Jan Mayen Island, felt. D= 3150 km -
- 28 (e)Z P 07 52 26, eZ 07 53 09, traces, USCGS : H = 07 46 38.5, 71.3 N, 8.4 W, h about 61 km, Jan Mayen Island -

October 1960

-5-

- 28 iZ P 13 30 01.4, iZ PcP 13 30 14.9, iZ pP 13 30 42.1, eZ 13 31 29, eZ PP 13 32 49, iZ PPP 13 33 31.2, eiZ 13 34 17.8, eZ 13 36 34, eZ S 13 39 42, USCGS : H = 13 18 14.3, 52.0 N, 157.4 E, h about 96 km, Kamchatka, D= 8500 km -
- 28 iZ P 22 42 04.0, eiZ 22 42 17.6, traces, USCGS : H= 22 29 26.6, 34.4 N, 141.1 E, h about 96 km, Near east coast of Honshu, Japan -
- 29 iZ+ Pn 00 09 24.9, iZ Pg 00 09 37.7, iZ! 00 09 42.7, iZ Sn 00 10 06.2, iZ Sg 00 10 21.0, iZ! 00 11 05.0, BCIS: H= 00 08 39, 44 N, 11.3 E, Italy, Felt at Mugello Province. Damage at Scarperia, D= about 370 km -
- 29 iZ+ Pn 00 13 01.9, iZ Pg 00 13 13.6, iZ! 00 13 21.8, iZ Sn 00 13 43.7, iZ! Sg 00 13 57.4, D= 370 km, after-shock, Italy -
- 29 Z (P) 04 27 (00), eiZ 04 27 34, USCGS : H= 04 17 02.1, 15.4 N, 46.4 W, h about 38 km, North Atlantic Ocean -
- 29 eiZ PKP 09 57 23.5, iZ! 09 57 28.0, eiZ 09 57 42.7, eiZ 09 58 06.9, traces, USCGS: H= 09 37 41.6, 15.8 S, 172.9 W, h about 99 km, Samoa Islands region, Mag.= 5 1/2- 5 3/4 (Pal), Felt: Apia -
- 29 iZ P 20 46 26.3, eiZ S 20 47 52.8, eiZ 20 48 25, traces, D= appr. 830 km -
- 30 (e)Z Pn 10 49 45, eiZ Sn 10 50 40.5, D= appr. 500 km -
- 30 Z 18 10-12, traces -
- 30 Z 21 50 (00), eZ 21 50 46, traces -
- 30 Z 22 01-02 traces -
- 31 eiZ (S) 07 55 07.6 -
- 31 iZ+ P 23 56 03.5, traces, USCGS : H = 23 44 18.9, 54.7 N, 161.8 E, Near east coast of Kamchatka, h about 60 km -

November 1960

NOVEMBER 1960

- 1 eiZ- P 06 25 50.6, iZ 06 25 52.8, eZ 06 28 17, USCGS: H= 06 15 29.4, 11.1 S, 17.7 W, h= about 35 km, Ascension Island region, Mag.= 5 (Pal) -
- 1 From 08 57 to 09 09 no Z records -
- 1 (e)Z 09 09 21, eZ SP 09 15 31.5, eZ 09 19 21, eM 09 54 -:Tz=18, Az= 25; USCGS : H= 08 46 01.9, 38.4 S, 74.4 W, h about 97 km, Near coast of Chile, Mag.= 6 3/4 - 7 (Berk), 7 1/4-7 1/2 (Pas), 6 1/2-6 3/4 (Pal) -
- 1 eZ 10 19 36.7 -
- 1 iZ+ P or PKP 10 37 09.3, traces -
- 1 iZ- Pn 16 15 38.6, iZ 16 15 49.4, iZ PgPg 16 16 08.3, iZ Sn 16 16 59, iZ 16 17 06, iZ! M 16 17 57.8, eiZ 16

November 1960

-6-

- 20 11.8, USCGS : H= 16 13 56.2, 40.9 N, 21.0 E, h about 33 km, Greece-Yugoslavia border, D= appr. 780 km -
- 1 iZ (S) 16 56 28.8, very weak -
- 2 iZ Pn 10 57 49.2, iZ PgPg 10 58 18.5, iZ(Sn) 10 59 04.3, iZ 10 59 20.1, iZ SgSg 10 59 50.8, iZ M 11 00 04, D= about 800 km -
- 2 iZ- P 16 42 34.8, iZ! 16 42 51.2, USCGS : H= 16 31 53.5, 23.1 N, 93.8 E, h about 126 km, Burma-East Pakistan border -
- 2 iZ PKP 17 34 14.2, iZ 17 34 20.5, eZ PP 17 36 57, eZ 17 37 22, obscured by microseisms, USCGS : H= 17 14 49.3, 10.9 S, 164.9 E, h about 25 km, Santa Cruz Islands, D= 15250 km -
- 3 eiZ P or PKP 03 02 52.1, traces -
- 4 eiZ Pn 02 21 33.5, iZ Sg 02 22 12.8, traces, D= 270 km;
- 4 iZ Pn 06 45 44.5, eZ Sn 06 47 09, eZ (SgSg) 06 47 56, iZ M 06 48 11, D= 840 km, Greece -
- 4 iZ (Pn) 12 48 32.6, iZ! 12 48 42.5, iZ 12 48 47.6, eiZ Sn 12 50 04, eiZ! 12 50 25.9, iZ Sg 12 50 55.4, iZ M 12 51 10, D= 820 km, Greece -
- 4 iZ Pg 13 47 33.0, iZ Sg 13 47 49.3, weak, D= 120 km -
- 4 (e)Z (Pn) 15 13 (30), eZ Sg 15 15 41.8, (D= 820 km) -
- 5 eZ 08 57 15, disturbed by microseisms -
- 5 iZ Pn 20 22 51.1, iZ(Pg) 20 23 36, continuation Z underexposed, eNE Sn 20 24 27, iN Sg 20 25 16, iN M 20 26 05, Tn=4.9, An=30, F about 20 40 - ;USCGS : H= 20 20 53.7, 39.2 N, 20.5 E, h about 49 km, Near coast of Greece, Mag.= 5 (Pal), BCIS: H= 20 20 49, 39.3 N, 20.5 E, Albania-Greece border, Mag.= 5,4 - Athens: Region of Epirus (Preveza)-Macroseismic epicentre: 39 1/4 N, 20 1/2 E, D= 890 km -
- 6 iZ!+ P 04 50 10.1, iZ PcP 04 50 26.2, iZ 04 50 32.6, eZ PP 04 53 04, USCGS : H = 04 38 16.7, 53.0 N, 159.8 E, h about 32 km, Near east coast of Kamchatka, Mag.= 5 1/2 - 5 3/4 (Pal), 6- 6 1/4 (Berk), 6 1/4 (Pas), D= 8500 km-
- 6 iZ+ PKP₁ 06 34 53.1, iZ pPKP₁ 06 35 12.3, iZ PKP₂ 06 35 37.4, USCGS : H= 06 15 05.7, 31.0 S, 177.7 W, h about 184 km, Kermadec Islands region, Mag.= 5 3/4- 6 (Berk), 6 1/2 (Pas), D = 18 100 km -
- 6 iZ+ P 22 22 23.9, iZ 22 22 37.8, eiZ 22 23 07, USCGS : H= 22 10 06.4, 52.7 N, 168.0 W, h about 42 km, Fox Islands-Aleutian Islands, Mag.= 5- 5 1/4 (Berk), 5 1/2 (Pal) -
- 8 iZ P 04 37 04.6, iZ 04 37 18.5, USCGS : H= 04 28 11.4, 27.8 N, 44.3 W, h about 25 km, North Atlantic Ocean -
- 9 eiZ PP 03 37 10.3, eZ 03 37 27, USCGS : H = 03 17 58.5, 60.7 S, 24.8 W, h about 37 km, Sandwich Islands, Mag.= 6 1/4- 6 1/2 (Pal) -

November 1960

-7-

- 9 eiZ P 10 54 32.5, eiZ 10 54 44.3, eiZ 10 55 11.1, iZ L 11 20 - , iZ M 11 24 -: Tz=12, Az= 10, USCGS : H = 10 43 43.1, 32.7 N, 103.4 E, h about 47 km, Szechwan Province, China, Mag.= 6 3/4 (Pas), D= 7400 km -
- 9 iZ P or PKP 17 53 23.7, iZ 17 53 32.6, traces -
- 9 Z 20 24-25 traces -
- 10 Z 02 03-05 traces -
- 10 eZ 10 26 45 (disturbed by microseisms), eiZ (Sg) 10 28 01.5, eiZ! 10 28 33.6, (D= 500 km) -
- 10 iZ Pn 15 32 18.1, iZ (Sg) 15 32 46.5, obscured by microseisms, (D= 210 km) -
- 11 iZ+ Pn 05 33 30.0, iZ 05 33 42.9, eiZ Sn 05 35 02, iZ Sb 05 35 23.9, iZ! NE Sg 05 35 48.8, iZ 05 36 06.2, eNE M 05 36 37, USCGS : H = 05 31 34.1, 39.5 N, 21.1 E, h about 39 km, Greece-Albania border region, BCIS: H= 05 31 29, 39.1 N, 20.7 E, NW coast of Greece - D=890 km.
- 11 iZ P or PKP 13 57 00.3, traces -
- 13 (e)Z 06 55 17, eiZ PP 06 55 32.2, USCGS : H = 06 37 05.7, 1.4 N, 127.2 E, h about 59 km, Molucca Passage -
- 13 eiZ- NE P 09 32 59.2, iNE 09 33 01, iZ PcP 09 33 08.1, iZ 09 33 19.8, iZ 09 33 31.6, eiZ PP 09 36 13.5, eiZNE S 09 43 27.8, eZ SP 09 44 14, eNE L 10 02 - traces - USCGS : H = 09 20 36.8, 51.1 N, 168.8 W, h about 65 km, Fox Islands, Aleutian Islands, Mag.= 7 (Pas), 7 1/4 (Berk), 6 3/4 (Pal), D= 9250 km -
- 14 iZ PKP 18 12 25.5, traces, obscured by microseisms, USCGS: H= 17 53 24.6, 20.5 S, 177.7 W, h about 536 km, Fiji Islands region -
- 14 eiZ 20 14 30.5, traces, USCGS : H= 19 59 31.8, 14.5 N, 92.8 W, h about 100 km, Near coast of Chiapas, Mexico, Mag.= 5 - 5 1/4 (Pal) -
- 15 eiZ P 09 16 43.5, traces, USCGS : H = 09 05 59.1, 23.2 N, 94.3 E, h about 103 km, Near Burma-India border -
- 15 Z 22 28-30, traces -
- 16 iZ PKP₁ 01 42 05.0, iZ 01 42 14.4, iZ PKP₂ 01 42 32.4, traces, USCGS : H = 01 23 11.1, 23.7 S, 179.3 E, h about 552 km, South of Fiji Islands region, D= 17 200 km -
- 16 iZ Pn 04 30 50.8, iZ (SgSg) 04 33 25, (D= 920 km) -
- 16 Z 15 50-52 traces -
- 16 iZ+ P 23 09 17.4, iZpP 23 09 23.7, iZ 23 10 28.3, traces, USCGS : H= 22 59 47.6, 38.0 N, 89.5 E, h about 24 km, Sinkiang Province, China, D= 6100 km -
- 17 eiZ (Sg) 14 59 21.4, traces -
- 17 Z 18 27-29 traces -
- 17 eiZ P 19 59 08.1, traces, USCGS : H= 19 46 46.2, 52.3 N, 170.3 W, h about 16 km, Fox Islands, Aleutian Islands-

November 1960

-8-

- 17 eZ PKP₁ 21 42 37.8, traces, USCGS : H = 21 22 45.6, 56.2 S, 122.6 W, h about 38 km, South Pacific Ocean -
- 18 eZ 06 08 14.8, (initial phases lost while changing records) USCGS: H= 06 03 37.5, 35.0 N, 28.6 E, h about 43 km, East of Crete, Mediterranean Sea -
- 18 eZ Pn 22 44 55.8, iZ 22 45 02.9, eiZ Sn 22 45 33.7, iZ! (Sg) 22 45 51.8, D= appr. 350 km, weak -
- 19 iZ- PKP 07 23 45.2, USCGS : H= 07 04 58.1, 17.6 S, 179.0 W, h about 594 km, Fiji Islands region -
- 19 (e)Z (Pn) 12 30 58.0, eiZ 12 31 05.3, iZ 12 31 37.7, near, weak -
- 20 (e)Z P 22 15 36.0, eiZ 22 15 45.2, eiZ 22 15 57.2, eZ pP 22 16 08.4, eZ sP 22 16 25, eZ! 22 16 30.6, eZ PP 22 19 39, USCGS : H= 22 01 59.9, 6.8 S, 80.7 W, h about 93 km, Near coast of Peru (Eten and Santa Rosa), Mag.= 6 1/2 (Berk), 6 1/2 (Pal), 6 3/4 (Pas), D = 10 980 km -
- 21 iZ- PKP 04 47 23.7, USCGS : H= 04 29 04.7, 3.4 S, 152.3 E, h about 371 km, New Ireland region -
- 21 Z 17 15-20, traces, weak -
- 22 eZ PKP₁ 03 51 51.8, eiZ PKP₂ 03 52 03.7, USCGS : H= 03 31 54.3, 19.2 S, 173.1 W, h about 25 km, Tonga Islands region -
- 22 eZ P 06 34 45, USCGS : H = 06 21 45.0, 35.9 S, 52.3 E, h about 21 km, Indian Ocean, north of Crozet Islands. Mag.= 6 3/4 (Pas) -
- 22 (e)Z Pg 13 18 33.4, iZ Sg 13 18 47.9, D= 120 km, weak-
- 23 eZ PKP₁ 14 32 22, eiZ 14 32 42.8, iZ! (PKP₂) 14 32 53.7, eiZ 14 33 26.3, disturbed by microseisms, USCGS: H= 14 12 21.1, 24.2 S, 176.1 W, h about 28 km, South of Tonga Islands- Mag.= 6 3/4 (Pas), (Berk), 6 3/4 - 7 (Pal), D= about 17 450 km -
- 23 eZ PKP₁ 18 16 33.2, eiZ PKP₂ 18 17 06.0, USCGS : H= 17 56 38.0, 24.0 S, 176.3 W, h about 51 km, South of Tonga Islands region -
- 23 iZ Pn 23 26 24.8, eiZ Sg 23 27 17.9, D= appr. 360 km -
- 24 eiZ+ PKP 05 09 10.0, iZ! 05 09 12.5, eiZ 05 09 18.6, eiZ 05 09 41.2, eZ 05 11 (00), USCGS H = 04 50 15.8, 4.6 S, 153.0 E, h about 87 km, New Britain region. Felt. Mag.= 6 1/4 (Pas) -
- 24 eiZ+ PKP₁ 07 12 38.1, iZ PKP₂ 07 13 08.9, eN 07 13 24, eZ PP 07 16 49, eZ! 07 22 57.5, eNE M 08 22 -, USCGS: H= 06 52 41.1, 23.2 S, 176.1 W, South from Tonga Islands region, h about 23 km, Mag.= 7 (Pas), 7 1/4 - 7 1/2 (Berk), 7- 7 1/4 (Pal), D= 17 350 km -
- 25 eiZ- P 22 06 28.3, Z 22 07 (00) in the minute interruption, eZ PP 22 09 44, USCGS : H= 21 54 13.8, 38.0 N, 140.5 E, h about 157 km, Honshu, Japan, D= about 9300 km-

November 1960

-9-

- 26 iZ Pn 02 43 14.7, iZ Pg 02 43 17.0, iZ 02 43 21.5, iZ Sg 02 43 35.7, iZ 02 43 48.5, D= 170 km, weak -
- 27 eiZ+ P 15 29 18.8, USCGS : H= 15 17 15.2, 42.8 N, 143.3 E, h about 122 km, Near coast of Hokkaido, Japan -
- 27 iZ P 20 46 25.5, traces, USCGS : H = 20 37 26.4, 3.1 S, 29.1 E, h about 60 km, Congo -
- 29 iZ- P 14 19 25.7, disturbed by microseisms, USCGS : H= 14 07 02.2, 26.5 N, 126.1 E, h about 147 km, Ryukyu Islands -

December 1960

DECEMBER 1960

- 1 eiZ P 04 05 53.0, eZ PP 04 06 09.7, USCGS : H = 04 02 37.2, 38.1 N, 30.6 E, h about 137 km, Western Turkey, D= 1590 km -
- 1 iZ Pn 13 26 56.1, iZ 13 27 10.7, eiZ Sn 13 28 29.5, eiZ 13 28 55.5, eZ M 13 29 57, D= 890 km, weak -
- 1 iZ 20 58 18.3, traces -
- 1 iZ P 21 01 11.7, eZ 21 02 (00), traces, USCGS : H = 20 49 45.5, 48.8 N, 129.3 W, h about 15 km, Off coast of Vancouver Island, Mag.= 6 (Berk) -
- 1 Z 22 02-04 traces -
- 2 eiZ Pn 01 56 00.5, eZ 01 56 24.0, eiZ Sn 01 57 32.6, eZ M 01 58 35.5, D= 890 km -
- 2 eiZ+ PKP 04 56 30.8, USCGS: H= 04 37 28.2, 6.6 S, 152.5 E, h about 33 km, New Britain region -
- 2 eZ P 09 24 48, eZNE PP 09 29 11, eZ PPP 09 31 15, Z M 10 12 -, eNE M 10 07 -, Az=75, Tz= 19, USCGS : H= 09 10 41.0, 24.5 S, 69.9 W, h about 37 km, Near coast of Chile. Felt: Antofagasta. Mag.= 7 - 7 1/4 (Berk), 6 3/4 - 7 (Pal), 7 1/4 (Strasbg), D= 11 500 km. -
- 2 eiZ P 09 51 39.6, eZ! PP 09 55 51, obscured by preceding earthquake, USCGS : H= 09 37 38.6, 24.3 S, 69.8 W, h about 64 km, Near coast of Chile, D= 11 500 km -
- 3 eiZ+ P 04 34 28.1, iZ! 04 34 40.5, iZNE PPP 04 38 09.5, iZ pPPP 04 38 20.1, eiZ 04 38 35.6, (e)Z S 04 42 (34), NE MQ 04 56 -, NE M 04 57 - USCGS : H= 04 24 17.5, 42.8 N, 104.5 E, h about 45 km, Outer Mongolia, Mag.= 7 (Pas), 7 (Berk), 6 1/2 - 6 3/4 (Pal), D= 6 750 km -
- 3 eiZ P 09 24 58.7, traces, USCGS : H = 09 12 19.0, 21.1 N, 121.1 E, h about 35 km, Off south coast of Formosa-
- 3 iZ Pg 12 14 01.7, iZ Sg 12 14 17.5, iZ 12 14 20.6, D= 125 km -
- 4 iZ Pn 04 31 16.7, iZ Pg 04 31 28.7, iZ 04 31 43.4, iZ Sn 04 31 57.5, iZ! 04 31 59.5, iZ Sg 04 32 12.5, iZ! 04 32 21.6, iZ! 04 32 29.1, D = 380 km -
- 4 eZ 16 00 07, eiZ 16 01 00.5, traces -

December 1960

-10-

- 5 iZ PKP₁ 00 14 30.8, iZ 00 14 44.7, eZ 00 16 56.0, USCGS: H= 23 55 39.3, 21.2 S, 179.0 W, h about 633 km, Fiji Islands region -
- 5 iZ+ P 18 01 29.0, traces, USCGS : H= 18 07 26.7, 54.3 N, 161.2 E, h about 25 km, Near east coast of Kamchatka-
- 5 iZ Pn 19 13 01.1, iZ Pg 19 13 11.9, iZ Sn 19 13 32.7, iZ Sg 19 13 48.4, D= 320 km, weak -
- 5 iZ + P 21 26 08.3, iZ 21 26 21.8, iZ PP 21 26 34.7, iZ 21 26 53.6, BCIS: H= 21 21 44, 35.6 N, 7.2 W, Atlantic Ocean. Straits of Gibraltar. Felt. USCGS : H= 21 21 51.7, 35.7 N, 6.5 W, h about 66 km, Straits of Gibraltar. D= 2150 km -
- 5 Z 22 44-45 traces, disturbed by microseisms -
- 6 (e)Z P 09 10 (04) obscured by microseisms, iZ 09 14 10.5, iZ! PP 09 14 29.7!, eZ 09 15 23.3, eZ SKS 09 21 11, USCGS : H = 08 56 07.6, 21.4 S, 69.0 W, h about 25 km, Northern Chile. Felt: Antofagasta. Mag.= 5 1/4- 5 1/2 (Pal), D= 11 470 km -
- 7 iZ Pn 20 43 35.1, iZ Pg 20 43 40.8, iZ PgPg 20 43 46.9, iZ X₁ 20 43 52.7, iZ Sn 20 44 06.1, iZ Sg 20 44 14.7, iZ! 20 44 50.6, D= 275 km -
- 8 iZ PKP₁ 01 43 07.6, iZ PKP₂ 01 43 22.8, USCGS : H= 01 24 18.9, 21.8 S, 179.4 W, h about 685 km, Fiji Islands region, D= 17 000 km -
- 8 iZ Pn 05 39 02.0, iZ Pg 05 39 08.8, iZ Sg 05 39 45.2, iZ! 05 39 58.7, D= 290 km, weak -
- 8 Z 12 12- 15 traces -
- 11 iZ+ PKP 00 20 47.8, iZ 00 20 55.5, iZ 00 21 11.4, obscured by microseisms, USCGS : H = 00 01 10.4, 22.1 S, 171.4 E, h about 144 km, Loyalty Islands region -
- 11 iZ Pn 07 25 07.3, iZ Sg 07 25 45.5, iZ 07 25 51.7, iZ 07 25 54.4, traces, D= 270 km, weak -
- 11 eiZ PKP 19 12 28.6, iZ 19 12 35.5, eZ 19 12 39.9, eZ 19 12 49.8, eiZ pPKP 19 12 59.4, eiZ 19 16 11.3, eZ PKS 19 16 17.0, USCGS: H= 18 53 09.2, 15.7 S, 166.9 E, h about 133 km, New Hebrides Islands region, Mag.= 6 1/4- 6 1/2 (Pas), D= 15 700 km -
- 12 iZ Pn 06 36 47.1, iZ (Sg) 06 37 24.6, (D= appr.270 km), weak -
- 12 iZ+ Pn 22 00 02.2, iZ Pg 22 00 09.7, iZ 22 00 16.7, iZ (Sn) 22 00 30.4, iZ Sg 22 00 46.2, D= 300 km -
- 13 (e)Z PKP₁ 07 56 (33), obscured by microseisms, iZ PKP₂ 07 57 16.8, eiZ PP 08 00 55.8, USCGS : H= 07 36 13.8, 52.1 S, 160.9 E, Macquarie Islands, Mag.= 7 1/4 (Pas), 7 (Pal), h about 29 km -
- 13 iZ PKP 09 23 03.3, traces, USCGS : H= 09 03 09.2, 21.8 S, 175.5 W, h about 84 km, Tonga Islands -
- 13 eiZ 15 14 06.4, traces -

December 1960

-11-

- 14 eiZ 13 51 36.9, traces -
- 15 eZ+ P 00 05 20.5, eiZ PP 00 09 42.3, eZ PPP 00 11 43.4, eiZ 00 12 23.9, eiZ SKS 00 15 55.6, eZ 00 16 15.4, eZ 00 18 29.6, USCGS : H = 23 51 28.6, 2.9 N, 126.5 E, h about 77 km, Molucca Passage, Mag.= 6 3/4 (Pas), (Berk), D = 11 450 km -
- 15 eiZ 19 59 37.4, traces -
- 17 eiZ P 10 50 21.6, eiZ 10 51 25, eZ PP 10 54 23, eiZ pPP 10 55 20, eZ SKKS 11 00 39, USCGS : H = 10 37 14.1, 6.4 S, 109.3 E, h about 295 km, Java Sea, D= 10 930 km, disturbed by microseisms -
- 18 iZ Pg 01 53 36.4, iZ! Sg 01 53 50.6, eNE Sg 01 53 52, D= 110 km. BCIS : H= 01 53 16, 45°N, 15° E, Yugoslavia, near the Adriatic Sea, felt at Ljubljana (II-III° MCS)-
- 18 iZ Pg 01 58 05.6, iZ Sg 01 58 20.9, aftershock, weak -
- 18 iZ! Pg 01 58 54.0, iNE! Sg 01 59 12.4, D= appr. 145 km, BCIS: H= 01 58 32, aftershock -
- 18 iZ Pg 03 04 37.0, iZ Sg 03 04 52.5, D= 135 km, very weak, aftershock -
- 18 iZ Pg 04 52 28.6, iZ Sg 04 52 43.7, D= 120 km, aftershock, weak -
- 18 Z 12 40-41, traces, near -
- 19 iZ- PKP 07 19 43.9, traces, USCGS : H = 06 59 52.2, 21.0 S, 169.4 E, h about 25 km, Loyalty Islands region -
- 19 iZ- Pn 14 35 27.2, iZ PgPg 14 35 41.9, iZ Sg 14 36 17.1, BCIS: H= 14 34 37, 44.5 N, 11.0 E, Italy. Etruscan Appenines, south of Bologna- D= 330 km -
- 20 iZ 06 46 04.1, iZ (Sg) 06 46 20.9, traces, weak-
- 20 Z 10 43-44 traces -
- 20 iZ PKP 12 01 54.2, traces, USCGS : H= 11 42 04.9, 21.1 S, 179.1 W, h about 662 km, Fiji Islands -
- 22 iZ+ Pg 00 23 12.4, iZ 00 23 15.4, iZ! NE 00 23 25.3, iZNE Sg 00 23 34.9, iZ 00 23 41.0, D= 170 km -
- 22 iZ 00 27 20.4, iZ 00 27 30.1, traces, aftershock?
- 22 Z 02 59 to 03 01 -, traces -
- 22 eiZ P 03 14 12, eiZ 03 14 33.2, eiZ 03 14 48.1, USCGS: H= 03 02 29.2, 9.8 N, 94.2 E, h about 60 km, Nicobar Islands-
- 22 (e) Z PKP 21 21 05, eZ sPKP 21 23 42.3, eZ 21 23 53.7, traces, USCGS : H= 21 02 41.1, 6.8 S, 155.3 E, h about 469 km, Solomon Islands, Mag.= 5 1/2 (Pal) -
- 22 (e)Z Pg 22 52 16.5, iZ Sg 22 52 28.7, D= appr. 100 km, weak -
- 23 eiZ Pg 08 21 42.7, iZ Sg 08 21 56.0, iZ SgSg 08 22 03.6, D=110 km -
- 23 iZ+ P 09 54 40.4, eiZ 09 54 45.1, iZ 09 55 00.5, eiZ pP

December 1960

-12-

- 23 (cont.) 09 55 21.3, USCGS: H= 09 41 48.4, 3.3 S, 101.9 E, h about 134 km, Near coast of Sumatra, D= 10 050 km-
- 23 eiZ Pg 11 29 39.6, iZ! Sg 11 29 54.8, D= 120 km, weak-
- 24 (e)Z Pg 18 58 13 (obscured by microseisms), eiZ 18 59 21.3, eZ (Sg) 19 00 17.3, traces, D= appr. 790 km -
- 25 eiZ+ P 20 39 20.1, disturbed by microseisms, USCGS : H= 20 27 34.1, 54.6 N, 161.6 E, h about 37 km, Near east coast of Kamchatka -
- 26 eZ P 01 57 28.5, traces, USCGS: H= 01 44 48.7, 33.8 N, 136.2 E, h about 109 km, Near south coast of Honshu, Japan -
- 27 eZ P 10 48 06.6, eZ 10 48 15.2, traces, USCGS : H= 10 35 28.0, 41.3 N, 124.9 W, h about 30 km, Off coast of Northern California, Mag.= 5-5 1/4 (Berk), 5 3/4 - 6 (Pal) -
- 28 eiZ P or PKP 02 16 20.1, iZ 02 16 25.4, traces -
- 28 Z 02 22-28, traces, weak -
- 28 eZ P 05 42 40.4, eiZ PP 05 42 50.7, iZ 05 42 59.0, eiZ S 05 44 55.8, eiZ SS 05 45 18.2, eiZ 05 45 23.2, eZ 05 45 39.0, USCGS : H = 05 39 43.7, 34.9 N, 22.5 E, h about 67 km, Near coast of Greece, D= 1420 km -
- 29 iZ Pg 05 46 25.7, iZ Sg 05 46 27.6, traces, D= 10 km, weak, not felt-
- 29 (e)Z PP 10 56 57, eZ 10 57 06, eZ PPP 10 59 46, traces, obscured by microseisms, USCGS: H= 10 36 40.0, 44.8 S, 75.6 W, h about 30 km, Near coast of Southern Chile, Mag.= 6 1/2-6 3/4 (Pas), 5 3/4-6 (Berk), (Pal), D= 13 350 km -
- 29 eZ P 18 22 34.3, eZ PP 18 22 45.0, eZ 18 23 39.7, eiZ S 18 24 54.0, iZ 18 25 05.8, eiZ SS 18 25 11.8, eZ L 18 28 (00), USCGS: H = 18 19 41.6, 35.3 N, 22.6 E, h about 54 km, Near Crete, Mediterranean Sea, D= 1380 km-
- 30 iZ Pg 10 42 25.4, iZ! Sg 10 42 29.1, D= 25 km -
- 30 Z 15 13-14 traces, near -
- 30 (ei)Z Pg 18 51 38.4, iZ! Sg 18 51 51.2, iZ SgSg 18 51 54.6, obscured by microseisms, D= 110 km -
- 31 eiZ 21 16 55.2, obscured by microseisms -

Ljubljana, April 30, 1961

V. Ribarič