

University of Ljubljana  
Astronomical and Geophysical  
Observatory  
Ljubljana  
Trg revolucije 11, P.O.B. 20  
Yugoslavia

1963

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

(January - March 1963)





University of Ljubljana  
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 Ljubljana, Trg revolucije 11  
 P.O.B. 20 - Yugoslavia



PRELIMINARY SEISMOLOGICAL BULLETIN

from January 1, 1963 to March 31

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

Instruments:

Wiechert, horizontal astatic seismograph,  $M= 200$  kg,  
 mechanical registration, 14-16 mm/min;

Constants (15.II.1963):

Component:	$T_0$	$v:1$	$r/T_0^2$	$V$
N-S	4.9	2.7:1	0.021	58
E-W	4.8	2.8:1	0.019	61

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

Note: Periods of seismic waves are given in seconds, the amplitudes in microns; sign + means compression, movement of ground towards south or east, sign - means dilatation or movement towards south or west. All times are given in GMT. Time signals are received one or two times daily from Pontoise, Potsdam or Moscow and are registered on a chronograph. Wherever possible time readings up to one tenth of a second are given.

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1 iZ Pn 15 43 49.8, iZ Pg 15 44 00.2, iZ PgPg 15 44  
 10.4, iZ Sn 15 44 25.3, iZ Sg 15 44 37.2, iZ (SgSg)  
 15 44 52.5, D= 315 km. Roma: ePg 15 43 52.5, felt  
 $4^{\circ}$  at Macerata, Italy. (press)



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- 1 iZ+ P 23 50 58.1, iZ pP 23 51 14.3, iZ sP 23 51 25.0, eiZ PP 23 53 48.6, USCGS: H= 23 39 05.6, 56.6 N, 157.7 W, h about 50 km, Alaska Peninsula. M=6 1/2 (Pas), 5 3/4 (Pal), D= 8.550 km.
- 2 Z 10 44.9 traces, eiZ 10 45 28.1, iZ 10 45 38.8, iZ 10 46 38.4
- 2 iZ- Pg 12 17 41.8: Tz=0.1, Az=3, iZ! Sg 12 17 43.6, iZ 12 17 47.4, D= 14 km, Felt at Jevnica (46° 05' N, 14° 44' E) Slovenia, 4° MCS, local shock.
- 2 iZ PKP 16 15 38.4, obscured by microseisms. USCGS: H= 15 55 47.9, 52.9 S, 118.2 W, h about 33 km, South Pacific Ocean.
- 3 iZ P 03 17 36.7, eiZ 03 17 47.5, traces, USCGS: H= 03 05 03.5, 29.7 N, 130.1 E, h about 33 km, Ryukyu Islands
- 3 eiZ PKP 09 58 38.9, eiZ! 09 58 54.6, traces, obscured by microseisms, USCGS: H= 09 39 46.8, 5.3 S, 151.5 E, h about 74 km, New Britain. Felt: Palmalmal, Pomio, Karlai, Raboul. M= 5 1/4 (Pal).
- 3 iZ Pn 19 00 51.0, traces, obscured by microseisms, eiZ (Sn) 19 02 29.7, eiZ! 19 02 54.8
- 4 iZ P 00 33 47.5, eiZ! 00 33 54.6, Z 00 34 (00), USCGS: 00 23 55.1, 1.2 N, 27.7 W, h about 33 km, 1500 km South of Cape Verde Islands.
- 4 iZ Pn 22 48 29.6, iZ Sg 22 49 23.4, iZ! 22 49 41.3, D= 360 km.
- 5 iZ P or PKP 00 47 12.4, iZ 00 47 16.4,
- 5 iZ PKP 13 24 20.3, eZ 13 24 58.4, USCGS: H= 13 04 48.1, 17.8 S, 167.9 E, h about 33 km, New Hebrides Islands. Felt: Port Vila.
- 6 iZ P 21 33 10.0, eZ 21 33 17.9, USCGS: H= 21 20 56.5, 47.7 N, 155.9 E, h about 33 km, Kurile Islands.
- 8 iZ Pn 13 51 14.9, iZ Sn 13 51 55.7, iZ Sg 13 52 13.8, weak, D= 380 km.
- 8 iZ+ P 15 58 56.1, iZ 15 59 07.2, USCGS: H= 15 46 45.5, 31.2 N, 130.2 E, h about 177 km, Near coast of Kyushu, Japan.
- 8 iZ- Pg 16 17 06.7, iZ! 16 17 12.1, iZ!NE Sg 16 17 15.9, iZ M 16 17 25.7, D= 75 km, BCIS: H= 16 16 58, 45.5 N, 14.5 E, Yugoslavia. Felt 5° MCS at Rijeka (45° 19' N, 14° 26' E) and 2-3° at Ljubljana. Trieste: felt 4-5° MCS.
- 8 iZ Pg 16 25 57.6, iZ Sg 16 26 05.3, D= 60 km, weak aftershock.
- 8 iZ PKP 20 09 50.9, eiZ 20 09 59.7, USCGS: H= 19 50 04.9, 17.0 S, 171.8 W, h about 33 km, Samoa Islands region.
- 10 iZ Pg 06 18 21.1, iZ! Sg 06 18 36.2, D= 120 km, weak.

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- 11 iZ 17 12 36.4, eiZ 17 12 43.3, traces, disturbed by microseisms.
- 11 iZ PKP<sub>1</sub> 17 25 18.8, iZ PKP<sub>2</sub> 17 25 57.7, USCGS: H=17 05 42.3, 29.4 S, 178.6 W, h about 225 km, Kermadec Islands.
- 12 eiZ P 03 53 11.1, iZ 03 53 33.5, USCGS: H=03 40 34.8, 4.8 N, 76.7 W, h about 102 km, Northern Colombia.
- 12 iZ P 06 27 57.3, eiZ pP 06 27 31.2, USCGS: H= 06 20 13.6, 36.1 N, 69.6 E, h about 97 km, Hindu Kush.
- 14 iZ P 11 39 30.9, weak traces.
- 14 eiZ P 18 35 25.0, iZ! 18 35 27.8, eiZ pP 18 35 39.4, eiZ 18 38 (03) in minute interruption, BCIS: H= 18 33 24, 46.0 N, 26.8 E, h about 100 km, Romania. USCGS: H= 18 33 25.3, 45.7 N, 26.6 E, h about 132 km, Romania.
- 14 eiZ+ Pg 20 21 59.2, iZ Sg 20 22 12.0, iZ! 20 22 14.2, eiZ! 20 22 25.5, D= 90 km. Raibl (46°26' N, 13°35' E), Italy. Heavy underground collapse and earth-slide in abandoned mine. Damage on buildings at Raibl (Rabelj)-(press).
- 15 iZ P 01 38 13.9, iZ 01 38 26.8, USCGS: H= 01 32 20.0, 68.9 N, 17.1 W, h about 33 km, Denmark Strait.
- 15 iZ P 05 29 02.7, iZ 05 29 06.6, BCIS: H= 05 23 00, 69.5 N, 17.5 W, North Atlantic Ocean, Denmark Strait. USCGS: H= 05 23 10.4, 69.0 N, 16.6 W, h about 33 km, Jan Mayen Island region.
- 15 iZ Pn 05 34 00.0, iZ Sg 05 34 19.5, D= 155 km, weak.
- 15 eiZ 06 29 53.1, traces.
- 15 Z P 15 07 (05) in minute interruption, eiZ 15 07 56.7, iZ Sn 15 09 22.3, iZ! 15 09 37.5, BCIS: H= 15 04 17, 36.1 N, 24.0 E, h about 100 km, Mediterranean Sea, off north of Crete. USCGS: H= 15 04 15.0, 36.0 N, 23.9 E, h about 81 km, Mediterranean Sea.
- 15 eiZ- PKP<sub>1</sub> 19 45 25.3, iZ! 19 45 33.7, iZ PKP<sub>2</sub> 19 45 46.2, iZ<sub>1</sub> pPKP<sub>1</sub> 19 47 33.7, USCGS: H= 19 26 34.3, 20.5 S, 177.9 W, h about 496 km, Fiji Islands.
- 15 iZ Pn 21 27 14.4, iZ Sn 21 29 03.6, iZ 21 29 32.1, eiZ 21 30 02.6, eZ! 21 31 40.5, D= about 1050 km.
- 15 iZ P 22 30 04.6, eiZ 22 30 15.1, USCGS: H= 22 17 50.9, 31.3 S, 13.4 W, h about 33 km, South Atlantic Ocean.
- 17 iZ P 20 53 37.7, obscured by microseisms, USCGS: H= 20 41 14.8, 25.6 N, 125.2 E, h about 140 km, Ryukyu Islands.
- 21 iZ Pg 18 10 48.2, iZ Sg 18 11 10.6, iZ SgSg 18 11 14.6, D= 170 km. Zagreb: iPg 18 10 32, D= 73 km. Probable epicenter: 45.0 N, 16.3 E, valley of Una (Bosnia).
- 24 iZ Pn 04 00 40.7, iZ 04 01 00.1, eiZ Sn 04 02 04.2,



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- 24 (cont.) iZ 04 02 18.4, eZ SgSg 04 03 03, iZ 04 03 18.9, D= about 850 km, Athens: ePn 03 59 56.8, ei Sg 04 00 43.5, phases obscured by microseisms.
- 24 iZ PKP<sub>1</sub> 12 28 45.6, obscured by microseisms, iZ PKP<sub>2</sub> 12 28 58.7, iZ! 12 29 01.0, USCGS: H= 12 09 01.2, 15.2 S, 173.6 W, h about 33 km, Tonga Islands, felt: Apia. D= 16.500 km.
- 25 iZ PKP 00 35 33.7, iZ 00 36 (07), iZ 00 36 24.6, USCGS: H= 00 16 05.7, 20.3 S, 169.6 E, h about 135 km, Loyalty Islands. Nouméa: H= 00 16 04, 20.4 S, 169.7 E, (M= 6 1/2), Loyalty Islands.
- 25 iZ Pn 05 27 51.3, iZ Sn 05 28 24.7, iZ Sg 05 28 36.5, iZ! 05 29 00.6, disturbed by microseisms, D= 300 km.
- 25 iZ 22 19 27.4, weak traces.
- 26 iZ Pg 13 49 05.9, iZ! Sg 13 49 17.5, iZ 13 49 21.5, D= 90 km.
- 26 Z 15 29-32, traces.
- 27 eiZ P 01 19 33.2, iZ 01 19 48.9, USCGS: H= 01 06 55.4, 25.6 N, 128.3 E, h about 61 km, Ryukyu Islands.
- 27 iZ 02 01 32.3, weak traces.
- 27 iZ Pn 02 02 16.4, iZ Pg 02 02 26.2, iZ X 02 02 38.9, eiZ Sn 02 02 59.4, iZ Sg 02 03 12.6, eiZ! 02 03 24.7, BCIS: H= 02 01 20, 44.7 N, 10.0 E, North Italy, W of Parma. D= 380 km.
- 27 eiZ P 19 40 43.2, iZ! 19 40 46.4, iZ pP 19 40 58.9, iZ PP 19 41 31.5, iZ! 19 44 14.2, BCIS: H= 19 35 09, 41.1 N, 49.7 E, h=0 km (determination by electronic calculating machine), USSR, Baku region. USCGS: H= 19 35 14.3, 41.2 N, 49.8 E, h about 33 km, Caspian Sea, near Aserbaidjan (USSR), M= 5 1/2-5 3/4 (Pal), D= 2850 km.
- 28 iZ PKP 12 31 14.3, obscured by microseisms, USCGS: H= 12 12 19.8, 2.6 S, 149.9 E, h about 33 km, New Britain, M= 6 1/2 (Pas).
- 28 iZ+ P 13 12 55.8, iZ! 13 12 57.4, iZ 13 13 15.3, iZ PP 13 15 58.5, obscured by microseisms, USCGS: H= 13 00 50.7, 54.7 N, 161.6 W, h about 33 km, Alaska Peninsula. M= 6-6 1/2 (Pas), D= 8.850 km.
- 29 Z P 09 33 04.7, iZ 09 33 09.1, iZ 09 33 25.9, eiZ 09 35 18.0, Z (PP) 09 36 (03), disturbed by microseisms, USCGS: H= 09 21 14.3, 49.7 N, 154.9 E, h about 126 km, Kurile Islands. D= 8.850 km.
- 30 iZ 10 28 44.8, eiZ PP 10 28 59.6, eZ PPP 10 31 15, USCGS: H= 10 10 04.1, 55.6 S, 28.3 W, h about 33 km, Sandwich Islands region. D= 11.900 km.
- 31 eZ P 05 19 16, eiZ 05 20 24.6, eiZ PP 05 22 30.8, USCGS: H= 05 06 46.0, 27.9 N, 126.3 E, h about 33 km, Ryukyu Islands. D= 9.300 km.
- 31 iZ+ Pn 15 09 47.0, iZ 15 09 52.5, eZ PgPg 15 10 58.5,

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- 31 (cont.) eZ Sn 15 11 49, iZ 15 11 54.8, iZ! 15 12 07.9, iZ 15 12 19.7, BCIS: H= 15 06 51, 35.2 N, 22.1 E, Mediterranean Sea. Off west coast of Creta island. USCGS: H= 15 07 00.4, 35.8 N, 21.9 E, h about 33 km, Ionian Sea, west of Creta. D= about 1.280 km.
- 31 iZ P 17 11 33.8, iZ 17 11 42.0, USCGS: H= 17 06 04.4, 41.4 N, 50.2 E, h about 33 km, USSR, Turkmenia.

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- 2 iZ Pn 19 34 59.3, iZ Pb 19 35 07.8, iZ Pg 19 35 12.7, iZ PgPg 19 35 16.7, iZ X<sub>2</sub> 19 35 36.0, iZ Sn 19 35 44.9, iZ Sg 19 36 08.0, D= 430 km, Trieste: e Pg 19 35 04
- 3 iZ Pn 18 17 06.6, iZ! 18 18 07.1, D= 400 km, obscured by strong microseisms.
- 4 iZ P 07 25 08.5, traces obscured by microseisms, USCGS: H= 07 18 06.9, 27.7 N, 54.6 E, h about 33 km, Southern Itan. Felt: Lar and Bastak.
- 4 eiZ+ P 23 33 09.2, disturbed by microseisms, USCGS: H= 23 21 09.0, 48.5 N, 154.9 E, h about 85 km, Kurile Islands.
- 5 iZ Pn 12 21 49.0, iZ Pb 12 21 50.6, iZ Pg 12 21 56.2, iZ X 12 22 08.6, eiZ Sn 12 22 18.9, iZ Sb 12 22 23.0, iZ Sg 12 22 27.2, D= 268 km, BCIS: H= 12 21 06, 47.3 N, 11.6 E, Valley of Inn, east from Innsbruck; Wien: 47.3 N, 11.4 E, Innsbruck-Ost, Tirol. Io=5° MCS.
- 5 iZ Pn 12 26 49.1, iZ Sg 12 26 24.9, obscured by microseisms. Inn valley, Tyrol, aftershock. BCIS: H= 12 26 03, D= 260 km.
- 5 eiZ PP 20 59 02.4, USCGS: H= 20 39 21.6, 38.4 S, 73.2 W, h about 41 km, Near coast of Central Chile. M= 6 1/4- 6 1/2 (Pas), 6- 6 1/4 (Berk), 5 3/4 - 6 (Pal).
- 6 iZ Pg 04 27 33.0, iZ Sg 04 27 43.7, D= 85 km, felt 3,5° MCS at Opatija (45° 20' N, 14° 19' E) at the Adriatic Sea.
- 6 iZ+ PKP 06 12 48.8, USCGS: H= 05 53 53.9, 18.1 S, 177.6 W, h about 500 km, Fiji Islands region.
- 6 eiZ+ PKP 13 06 09.9, iZ 13 06 39.6, USCGS: H= 12 46 26.7, 22.2 S, 171.3 E, h about 101 km, Loyalty Islands region.
- 7 eiZ PKP 01 42 29.6, Tz=1,0<sup>S</sup>, Az=0,05, USCGS: H= 01 23 41.7, 17.7 S, 178.7 W, h about 559 km, Fiji Islands region. M= 4.3 (CGS).
- 7 (ei)Z P or PKP 04 56 51.4, iZ 04 56 53.5, Z 04 57 (00).
- 7 eZ! P 16 53 05.1, eiZ! 16 53 11.9, USCGS: H= 16 44 45.3, 14.4 N, 53.3 E, h about 33 km, Gulf of Aden.
- 8 eiZ Pn 11 42 24.0, iZ (Pg) 11 42 33.9, eiZ X<sub>2</sub> 11 42 56.7, eiZ Sn 11 43 07.7, eiZ! 11 43 17.0, eiZ Sg 11



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- 8 (cont.) 43 25.7, iZ! SgSg 11 43 30.7, D= 390 km, Zagreb: felt on island of Korčula (42° 57' N, 17° 10' E) Adriatic Sea.
- 9 iZ Pg 00 35 34.4, iZ Sg 00 35 36.0, D= 9 km, not felt.
- 9 iZ- P or PKP 16 16-19, weak traces.
- 10 iZ- P 21 47 57.7, iZ 21 47 59.6, USCGS: H= 21 35 48.7, 44.6 N, 147.8 E, h about 67 km, Kurile Islands region. M= 5.0 (CGS).
- 11 iZ+ Pg 10 36 28.7, iZ! PgPg 10 36 31.7, iZ Sg 10 36 36.9, iZNE SgSg 10 36 42.0, iZ M 10 36 45.8, iZ! 10 37 20.4, eiZ! 10 37 40.2, F 10 40 - ; D= 68 km, Zagreb: Pg 10 36 22.1, Sg 10 36 28.0, D= 45 km (WNW), Trieste: e Pn 10 36 38, i Sg 10 36 56, D= 130 km, BCIS: H= 10 36 16, 45° 52' N, 15° 30' E, h about 5 km, Yugoslavia- 10 km W from Brežice (Ljubljana). Maximum intensity: 5° MCS, macroseismic ray: 30 km (Ljubljana).  
Macroseismic data: Brežina/Brežice: 5°, Kostanjevica: 5°, Brežice: 4.5-5°, Globoko/Brežice: 4°, Artiče/Brežice: 4° MCS, Pišece/Brežice: 4°, Šmarjeta/Novo mesto: 4°, Krško: 4°, Grad/Brestanica: 3.5-4°, Črnomelj: 3.5°, Šentjernej/Novo mesto: 4°, Novo mesto: 3.5°, Podbočje/Videm Krško: 3.5°, Dobova: 3.5°, Kapele/Brežice: 3.5°, Mokronog: 3°, Sevnica: 3°, Dobova: 3°, Samobor: 3°, Lesično/Šmarje pri Jelšah: negat.
- 12 iZ Pn 04 49 05.0, iZ PgPg 04 49 19.6, eiZ 04 49 52.4, iZ Sn 04 50 00.3, iZ 04 50 13.8, iZ M 04 50 38.8, D= appr. 510 km.
- 12 iZ PKP 23 26 14.1, iZ! 23 26 15.1, iZ 23 26 18.2, eiZ 23 26 56.4, eiZ pP 23 28 31.6, eZ 23 28 52.0, USCGS: H= 23 07 28.9, 17.8 S, 178.6 W, h about 583 km, Fiji Islands, M= 5.5 (CGS).
- 13 eiZ P 01 43 27.1, iZ 01 43 36.8, USCGS: H= 01 34 34.6, 13.0 N, 57.9 E, h about 33 km, Arabian Sea.
- 13 iZ+ NE P 09 02 31.0, Tz=1.9, Az=1, eiZNE PP 09 05 41.9, eNE S 09 12 46.8, eZ SP 09 13 45.8, eZ M 09 44 - Tz=18, Az= 46, D= about 9.250 km, USCGS: H= 08 50 02.2 24.5 N, 121.8 E, h about 33 km, Northern Formosa. 3 killed and 15 injured; widespread, but moderate damage. M= 7 1/4 (Pas), 7 1/4 (Brk), 7-7 1/4 (Pal), 7 3/4 (Tri).
- 13 iZ Pn 12 46 28.3, iZ PgPg 12 46 54.7, iZ X<sub>1</sub> 12 47 02.8, iZ! E Sn 12 47 30.4, iZ! 12 47 43.8, iZ Sg 12 47 58.2, iZ eNE SgSg 12 48 09.9, iZ! M 12 48 20.5, eNE M 12 48 24, D= 580 km. BCIS: H= 12 45 10, 40.5 N, 15.8 E, Southern Italy. Felt at Tito, Sabriano di Lucania (damaged buildings) and Bari (press).
- 13 iZ PKP 18 33 11.4, eiZ 18 33 28.9, eiZ! 18 33 54.3, eiZ PP 18 35 39.6, eiZ PKS 18 36 38.4, USCGS: H= 18 13 55.1, 9.9 S, 160.8 E, h about 29 km, Solomon Islands. Felt: Honiara. M= 6 1/2 (Pas), 6 1/2 (Bks).

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- 13 (cont.) 6-6 1/4 (Pal) 5.8 (CGS), D= about 14.800 km.
- 13 iZ Pg 18 56 43.0, iZ Sg 18 56 51.5, D= 70 km, not felt, local.
- 13 eiZ P 20 04 31.2, iZ 20 04 40.8, USCGS: H= 19 55 36.0, 11.6 N, 57.7 E, h about 33 km, Socotra region.
- 14 iZ PKP 07 22 54.7, iZ! 07 23 02.6, iZ PP 07 23 40.3, iZ! 07 23 52.3, USCGS: H= 07 04 40.8, 7.2 S, 128.2 E, h about 197 km, Banda Sea. Felt: Darwin, Australia. M= 6 1/2 (Pas), 5.8 (CGS).
- 14 iZ(Pn) 11 07 03.2, iZ SgSg 11 08 07.6, obscured by microseisms.
- 14 iZ P 12 19 13.3, iZ 12 19 18.7, eiZ PP 12 21 25.8, obscured by microseisms. D= about 6.600 km, USCGS: H= 12 09 11.4, 00.9 N, 30.0 W, h about 33 km, Mid Atlantic Ocean, M= 4.6 (CGS).
- 14 iZ Pn 12 49 41.5, eiZ 12 50 28.2, iZ SgSg 12 51 43.9, iZ! 12 52 11.5, USCGS: H= 12 48 02, 40.4 N, 19.9 E, h about 33 km, Near coast of Albania. M= 4.4 (CGS), D= about 770 km.
- 14 iZ+ Pn 13 19 27.2, eiNE Pg 13 19 30.7, eiZNE Sn 13 19 50.3, iNE Sg 13 19 56.3, D= about 220 km, BCIS: H= 13 18 56, 44.1 N, 15.1 E, Felt: 6° MCS at Zadar (44° 07' N, 15° 15' E) Some damage. Felt at Knin and along the middle part of Adriatic coast. Ljubljana: felt 2.5° MCS. Trieste: felt: 4° MCS. USCGS: H= 13 18 56.4, 44.5 N, 15.5 E, h about 36 km. Near coast of Yugoslavia, slight damage at Zadar. M= 5.4 (CGS).
- 15 Z 05 59-06 01, weak traces, obscured by microseisms.
- 15 eiZ+ Pn 10 20 07.8, iZ 10 20 25.3, iZ (Sn) 10 21 30.6, eN 10 21 49, iZNE 10 22 37.4, iZNE Lg 10 22 50.2, (D= about 780 km), BCIS: H= 10 18 20, 40.2 N, 20.1 E, Albania. USCGS: H= 10 18 26.3, 40.6 N, 20.3 E, h about 33 km, Albania.
- 17 iZ+ Pn 20 12 56.9, iZ! Pg 20 13 03.9, iZ PgPg 20 13 07.2, iZ X<sub>1</sub> 20 13 14.3, iZ Sn 20 13 28.5, iZ! Sg 20 13 37.5, iZ SgSg 20 13 44.0, iNE 20 13 48, iZ M 20 13 57.0, iZ! 20 14 16.5, F: 20 19 - ; D= 285 km. BCIS: H= 20 12 12, 43.8 N, 17.2 E, Yugoslavia. Beograd: felt Split (43° 30' N, 16° 26' E) 5° MCS.
- 18 iZ+ PKP 14 32 54.9, iZ 14 32 59.2, iZ PP 14 33 02.6, eiZ 14 34 38.0, USCGS: H= 14 12 36.0, 36.2 S, 90.4 W, h about 33 km, West of Chile. M= 5.2 (CGS), D= 13.900 km.
- 18 Z 16 32-36 weak traces.
- 20 eiZ Pn 12 41 43.6, weak, iZ SgSg 12 42 41.0.
- 21 iZ Pn 10 31 53.6, iZ 10 32 27.1, iZ (Sn) 10 33 06.5, eiZ SgSg 10 33 47.6, eZ! 10 34 07.5, D= 680 km.
- 21 iZ P 17 17 53.0, iZ! 17 17 55.5, iZ PP 17 18 03.6, iZ PPP 17 18 12.8, iZ 17 18 25.9, iZ 17 20 18.2,



- 21 (cont.) iZ S 17 20 29.3, iZ 17 20 39.7, iZ! 17 20 47.1, iZ! M 17 20 54.3, D=1580 km, BCIS: H= 17 14 29, 32.6 N, 21.0 E, Libia. Press: destructive at Barca (El Merdj): more than 500 killed, 1000 injured. M= 5.6 (Ksara), 5 (Strasbourg), 4.7 (Collm). USCGS: H= 17 14 35.7, 32.7 N, 20.9 E, h about 33 km, Near coast of Libya, 300-500 dead, 500 injured, 12000 homeless at El Marj. M=5.0 (CGS).
- 21 iZ P 20 30 04.3, iZ PP 20 30 14.2, eZ S 20 32 38.8, eiZ 20 33 12.9, Libia aftershock. D=1580 km, BCIS: H= 20 26 38.
- 22 iZ P 07 18 35.2, iZ 07 18 43.1, obscured by microseisms, USCGS: H= 07 10 28.0, 85.0 N, 98.9 E, h about 33 km, North Polar region. M= 5.0 (CGS).
- 22 iZ! PKP 08 17 46.5, iZ 08 17 53.5, obscured by microseisms, USCGS: H= 07 58 57.0, 17.8 S, 178.8 W, h about 550 km, Fiji Islands region. M= 5.0 (CGS).
- 22 iZ Pn 14 14 33.4, iZ! 14 14 34.8, iZ Px 14 14 39.0, iZ 14 14 45.7, iZ Pb 14 14 47.7, iZ! Pg 14 15 (00) in minute interruption, iZ Xl 14 15 14.5, iZ 14 15 46.6, iZ! Sn 14 15 53.8, iZ 14 16 (00), iZ! Sb 14 16 13.6, iZ 14 16 21.0, iZ! Sg 14 16 31.0, iZNE Lg<sub>1</sub> 14 16 41.9, iZNE Lg<sub>2</sub> 14 17 17.5, corrected distance: 780 km. BCIS: H= 14 12 52, 40.4 N, 20.4 E, Albania. Felt: Argyro Kastron and Tepeleni (damage without victims - press) Felt 4<sup>0</sup> MCS at Skopje. USCGS: H= 14 12 54.4, 40.6 N, 20.5 E, h about 33 km, Albania-Greece border. Felt: Argyro Kastron and Tepeleni, Albania to Titov Veles, Skopje, Yugoslavia. M= 4.4 (CGS).
- 24 eiZ+ PKP 13 26 55.7, USCGS: H= 13 07 26.4, 18.3 S, 175.4 W, h about 209 km, Tonga Islands region. M= 4.5 (CGS).
- 24 iZ Pn 22 23 33.1, iZ (Pg) 22 24 (01), eiZ Sn 22 24 52.7, eiZ 22 25 24.8, eiZ (Sg) 22 25 40.1, eiZ! 22 26 17.2, D= about 780 km, aftershock Albania ?
- 25 iZ+ P 17 23 34.3, iZ 17 23 50.9, USCGS: H= 17 11 02, 24.4 N, 123.3 E, h about 33 km, Near east coast of Formosa. M= 5.3 (CGS).
- 26 eiZ+ P 20 29 20.5, eiZ 20 30 45.0, iZ+ PKP 20 32 47.4, iZ 20 32 54.5, iZ pPKP 20 33 33.7, eiZNE PP 20 34 32.9, eiZ pPP 20 35 26, eiZ! 20 36 06.4, iZ PPP 20 37 13.1, USCGS: H= 20 14 08.7, 7.5 S, 146.2 E, h about 171 km, Eastern New Guinea. M= 7 1/4 - 7 1/2 (Pas), 7-7 1/4 (Brk), 6 3/4-7 (Pal), 7.1 (CGS), D= 13.680 km.
- 27 eiZ PKP 04 48 56.7, iZ! 04 49 14.4, obscured by microseisms. USCGS: H= 04 30 00.8, 6.0 S, 149.4 E, h about 52 km, New Britain region. M= 6 1/2-6 3/4 (Pal), 5.2 (CGS).
- 28 iZ Pn 00 26 53.6, iZ Pg 00 27 (01), iZ Sn 00 27 26.3, iZ! Sg 00 27 39.2, iZ! 00 27 50.2. BCIS: H= 00 26 31, 44.4 N, 10.9 E, Appenins, Modena region, Italy. D= about 300 km.

- 1 iZ P 09 35 43.3, eiZ 09 36 21.5, obscured by microseisms, USCGS: H= 09 30 43.2, 35.8 N, 23.1 E, h about 156 km, South of Greece.
- 1 iZ P 19 24 13.5, traces. USCGS: H= 19 14 13.1, 1.4 N, 29.6 W, h about 33 km, Atlantic Ocean.
- 2 iZ PKP 22 35 59.4, USCGS: H= 22 16 35.4, 17.1 S, 175.0 W, h about 240 km, Tonga Islands. M= 5.1 (CGS).
- 4 eiZ P 07 49 05.0, iZ 07 49 11.4, iZ 07 49 19.6, USCGS: H= 07 41 51.0, 82.9 N, 7.7 W, h about 33 km, North Polar region. M= 5.0 (CGS).
- 4 eiZ P 13 51 10.1, iZ 13 51 31.0, USCGS: H= 13 38 41.0, 24.2 N, 121.7 E, h about 33 km, Formosa. M=4.8 (CGS).
- 4 eiZ P 15 13 28.5, iZ PP 15 13 40.4, Z! 15 13 57.0, eiZ S 15 15 49.4, iZ M 15 16 24.0, USCGS: H= 15 10 19.2 35.2 N, 25.4 E, h about 42 km, Crete. M= 4.8 (CGS), BCIS: H= 15 10 16, 35.2 N, 25.3 E, Crete, D= about 1450 km.
- 4 eiZ PKP 19 23 40.2, eZ 19 24 10.0, USCGS: H= 19 04 02.9, 19.3 S, 169.5 E, h about 43 km, New Hebrides Islands region. Felt: Tanna. M= 4.9 (CGS).
- 4 iZ Pg 22 30 52.6, Z 22 30 58.9, (in minute interruption) eZ 22 31 13.0, iZ! Sg 22 31 28.9, D= 300 km (corrected value) BCIS: H= 22 30 10, 45.5 N, 10.7 E, Northern Italy. Forcibly felt at Verona.
- 5 iZ 01 08 (01) weak trace.
- 5 eZ P 02 02 49.6, iZ 02 02 56.5, BCIS: H= 01 58 32, 35 N, 5 1/2 W, Morocco. USCGS: H= 01 58 31.7, 34.8 N, 5.4 W, h about 33 km, Northern Morocco. Felt: Quezanne and Meknes.
- 5 Z (Sg) 03 31 (01), weak traces in minute interruption.
- 5 Z 14 29.9.-30 traces.
- 5 eiZ Pn 16 22 35.2, iZ 16 24 26.7, weak traces.
- 6 eiZ Pn 22 36 53.0, eZ (Sn) 22 38 19, eiZ 22 38 57.3, eiZ 22 39 31.4, (D= about 820 km) weak.
- 6 Z 23 51 (01) in minute interruption, iZ 23 51 06.2, weak traces.
- 7 eZ PKP 05 41 20, eiZ 05 43 57.3, USCGS: H= 05 22 01.1, 27.0 S, 113.5 W, h about 33 km, Approximately 500 km W of Easter Island. M= 6 3/4 (Pas), 6 3/4 (Brk), 5.6 (CGS).
- 7 iZ P 21 57 16.6, eiZ 21 57 22.6, iZ 21 57 50.3, iZ PP 21 58 58.4, USCGS: H= 21 49 32.6, 36.1 N, 71.2 E, h about 202 km, Hindu Kush, D= 4.790 km.
- 8 eiZ P 00 23 09.6, weak trace, USCGS: H= 00 14 15.4,



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- 8 (cont.) 76.8 N, 94.7 W, h about 33 km, Queen Elisabeth Islands region, Canada, M= 4.5 (CGS).
- 8 eiZ+ PKP 03 04 09.0, iZ 03 04 17.1, eiZ! 03 04 48.5, USCGS: H= 02 44 31.5, 19.2 S, 169.7 E, h about 33 km, New Hebrides Islands. Felt: Tanna. M=5.3 (CGS).
- 8 iZ PKP 03 44 34.2, iZ 03 44 42.4, USCGS: H= 03 24 57.2, 19.2 S, 169.6 E, h about 49 km, New Hebrides Islands, felt: Tanna. M= 4.8 (CGS).
- 8 eZ PKP 03 52 40.4, iZ 03 52 46.9, iZ 03 53 02.1, USCGS: H= 03 33 03.4, 19.3 S, 169.6 E, h about 33 km, New Hebrides Islands. Felt: Tanna.
- 8 iZ Pn 12 35 09.9, eiZ 12 35 26.7, iZ(SgSg) 12 36 42.6, weak traces.
- 8 eiZ+ P 15 16 04.7, eiZ 15 16 11.3, eZ (PP) 15 18 13, USCGS: H= 15 06 05.3, 1.1 N, 29.9 W, h about 33 km, Mid-Atlantic Ocean, M=5.2 (CGS), D= 6580 km.
- 8 eiZ 15 34 49.9, eZ 15 35 29.8, traces, near.
- 9 iZ 00 10 09.6, weak trace.
- 9 eiZ+ P 02 25 57.0, iZ 02 26 09.8, iZ PP 02 27 35.7, USCGS: H= 02 17 39.5, 21.9 N, 62.0 E, h about 33 km, Arabian Sea, M=5.1 (CGS), D= about 5000 km.
- 9 eiZ PKP 23 02 40.5, iZ! 23 02 48.5, USCGS: H= 22 43 50.5, 21.5 S, 179.0 W, h about 529 km, Fiji Islands region, M= 4.4 (CGS).
- 9 eiZ! (Sn) 23 19 51.9, local traces.
- 10 Z 01 30 (01), eiZ 01 38 48.1, eiZ! 01 38 53.0, weak traces.
- 10 (e)Z P 03 06 (01) in minute interruption, iZ 03 06 05.9, USCGS: H= 02 53 33.0, 24.7 N, 122.1 E, h about 33 km, Near east coast of Formosa. M= 4.9 (CGS).
- 10 Z 06 09-10 traces, weak.
- 11 eiZ- P 07 30 31.7, iZ! 07 30 43.9, iZ 07 31 08.4, eiZ PP 07 31 16.9, eiZ 07 32 27.8, eiZ S 07 33 08.6, eZ! 07 34 36.4, eiZ 07 34 46.6, iZ 07 35 08.3, eZ!NE 07 36 03: Tz=8, Az=25, BCIS: H= 07 27 22, 38.0 N, 29.2 E, h about 33 km, Turkey; strongly felt at Denizli, Burdur and Isparta (Istan uI Kandilli), USCGS: H= 07 27 22.0, 38.1 N, 29.3 E, h about 33 km, Turkey. Felt. M= 5.5 (CGS). D= 1500 km.
- 11 eiZ PKP 09 21 26.9, iZ 09 21 33.1, weak, USCGS: H= 09 02 19.8, 18.7 S, 177.6 W, h about 402 km, Fiji Islands region. M= 4.8 (CGS).
- 11 eiZ (P) 10 35 35.5, weak traces, eiZ 10 36 16.3, USCGS: H= 10 27 42.1, 36.7 N, 71.1 E, h about 189 km, Hindu Kush. M= 4.7 (CGS), Quetta: H= 10 27 48.3, 36 1/2 N, 71 E, h about 200 km.
- 12 eiZ P or PKP 07 14 08.7, iZ 07 14 13.2, obscured by microseisms.

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- 12 iZ P 08 17 37.1, weak, obscured by microseisms, USCGS: H= 08 05 49.8, 53.9 N, 160.6 E, h about 33 km, Kamchatka. M= 4.7 (CGS).
- 12 iZ P 08 29 05.4, obscured by microseisms.
- 12 iZ P or PKP 08 42 42.7, eiZ 08 42 47.3,
- 12 iZ Pn 09 03 58.0, iZ (Sn) 09 05 50.1, eiZ 09 06 46.7, disturbed by microseisms, weak.
- 14 eiZ Pn 01 51 58.4, (ei)Z Sn 01 53 18.0, eZ 01 53 39.6, iZ! 01 54 40.8, D= about 750 km.
- 14 eiZ 12 14 39.6, weak traces.
- 14 eiZ P 18 42 54.5, weak traces. USCGS: H= 14 30 40.6, 46.5 N, 153.4 E, h about 32 km, Kurile Islands. M= 4.7 (CGS).
- 14 eiZ P or PKP 19 26 42.3, weak traces.
- 14 eiZ Pn 22 35 11.1, eiZ 22 36 48.5;
- 15 eiZ P 00 29 29.0, iZ 00 29 32.5, USCGS: H= 00 16 01.3, 8.4 N, 126.4 E, h about 117 km, Mindanao, Philippine Islands. M= 5.0 (CGS).
- 15 eZ P 05 55 54.6, eZ 05 56 03.5, USCGS: H= 05 46 32.8, 21.7 N, 45.4 W, h about 33 km, North Atlantic Ocean. M= 4.9 (CGS).
- 16 eiZ- P 08 57 03.7, iZ 08 57 04.1, iZ 08 57 08.1, iZ! 08 57 11.2, iZ! 08 57 16.3, iZ 08 57 21.0!, iZ! 08 57 38.0!, iZ! 08 57 47.8!, iZ! 08 58 15.6, iZ 09 00 07.5, eiZ PP 09 00 17.4, eZ PPP 09 02 10.5, eZ! S 09 07 17.4, eiE S 09 07 21, eiN S 09 07 27, D= 9100 km. USCGS: H= 08 44 48.3, 46.5 N, 154.7 E, h about 26 km, Kurile Islands region. M= 7 (Pas), 7 3/4 (Brk), 6 3/4 (Pal), 6.2 (CGS), 7 3/4-8 (Tri).
- 16 eiZ 09 23 36.3, eiZ 09 23 52.6
- 16 eiZ PKP 21 59 59.3, iZ 22 00 16.2, USCGS: H= 21 40 09.0 20.7 S, 174.6 W, h about 33 km, Tonga Islands. M= 5.0 (CGS).
- 16 eiZ- P 22 36 43.9, eiZ 22 36 47.1, USCGS: H= 22 28 56.7, 38.9 N, 71.8 E, h about 73 km, Tadzhik S.S.R. M=5.0 (CGS).
- 17 eZ 13 26 19.6, eiZ 13 26 25.0, weak traces.
- 17 iZ Pn 14 19 17.8, iZ 14 19 23.7, iZ 14 19 30.8, iZ Pg 14 19 57.1, eiZ 14 20 14.5, eiZ Sn 14 20 50.5, Z! 14 21 (00), iZ! 14 21 08.1, eiZ! 14 21 24.5, eiZ (SgSgSg) 14 21 56, eNE 14 22 17, D= about 900 km, BCIS: H= 14 17 18, 39.4 N, 21.0 E, Greece. USCGS: H= 14 17 25.9, 39.5 N, 21.5 E, h about 78 km, Greece. M= 4.8 (CGS).
- March 17, from 15 01 to March 18, 05 54 no Z records.
- 18 Z 11 44.5-48, weak traces.
- 18 (ei)Z Pn 12 00 41.8, iZ 12 01 44.0, eZ 12 03 24.7,





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- 18 iZ PKP 13 34 57.9, iZ! 13 35 02.6, USCGS: H= 13 16 23.5  
15.7 S, 178.4 W, h about 561 km, Fiji Islands region.
- 18 iZ Pn 14 17 18.2, iZ(Pg) 14 17 42.3, iZ 14 18 21.9,  
iZ Sg 14 18 53.9, eiZ! 14 19 14.7, D= 580 km, weak.
- 19 eiZ+ Pn 11 18 44.3, iZ 11 18 46.2, iZ! 11 18 54.1,  
iZ Pg 11 18 56.0, iZ X<sub>1</sub> 11 19 08.8, iZ 11 19 24.6,  
iZ! Sn 11 19 28.3, iZ Sg 11 19 48.5. D= 415 km,  
remarkable.
- 19 eiZ PKP 13 33 06.9, iZ 13 33 13.3, USCGS: H= 13 13 22.5  
22.6 S, 170.6 E, h about 49 km, Loyalty Islands region.  
M= 4.5 (CGS).
- 19 eZ PKP<sub>1</sub> 15 01 44.1, eiZ PKP<sub>2</sub> 15 01 50.6, USCGS: H= 14  
42 01.2, 22.6 S, 170.8 E, h about 33 km, Loyalty Islands  
region. M= 4.8 (CGS).
- 20 eZ PKP<sub>1</sub> 05 01 48.2, eiZ PKP<sub>2</sub> 05 01 54.1, iZ 05 02 06.0,  
USCGS: H= 04 43 13.5, 19.9 S, 179.1 W, h about 680 km,  
Fiji Islands region. M= 5.2 (CGS).
- 20 eZ PKP<sub>1</sub> 05 04 19.7, iZ! PKP<sub>2</sub> 05 04 31.5, eiZ pPKP<sub>1</sub>  
05 06 59.1, USCGS: H= 04 45 49.5, 19.6 S, 179.3 W,  
h about 680 km, Fiji Islands region. M= 5.2 (CGS).
- 20 iZ Pg 08 12 29.3, iZ Sg 08 12 47.7, D= 145 km.
- 20 eiZ 09 05 15.0, eZ 09 05 25.1, traces.
- 20 eZ 09 34 11, weak traces.
- 20 eZ PKP 11 04 29.7, iZ 11 04 40.3, USCGS: H= 10 44 41.3,  
15.8 S, 171.7 W, h about 33 km, Samoa Islands region.  
M= 4.6 (CGS).
- 20 eiZ P 14 53 19.5, eiZ 14 53 30.7, USCGS: H= 14 41 48.2,  
11.9 N, 93.1 E, h about 33 km, Andaman Islands region.  
M= 4.4 (CGS).
- 20 iZ Pn 16 40 58.0, iZ! Pg 16 41 07.9, iZ Sn 16 41 36.3,  
eiZ! Sg 16 41 47.2, iZ 16 41 57.9, D= 345 km.
- 21 iZ P 04 12 41.1, eiZ 04 12 53.5, USCGS: H= 04 00 11.1,  
36.5 N, 140.9 E, h about 50 km, Near east coast of  
Honshu, Japan. M= 5.2 (CGS).
- 21 iZ (Pn) 09 45 50.3, iZ Pg 09 45 58.8, iZ Sn 09 46 27.1,  
iZ Sg 09 46 43.9, iZ! 09 46 50.1, D= about 350 km.
- 21 (ei) Z Pn 22 43 59.5, iZ Pg 22 44 12.5, iZ Sn 22 44  
43.8, iZ Sg 22 44 58.3, D= 400 km.
- 22 iZ! Pg 15 02 01.5, iZ! Sg 15 02 06.8, i NE Sg 15 02 07.5,  
iZ SgSg 15 02 19.5, F: 15 06 -; D= 46 km. BCIS: H= 15  
01 54, 45° 53' N, 15° 05' E (macroseismic epicenter)  
Temenica valley, Slovenia-Yugoslavia (Ljubljana). Felt  
at Trebnje, Mirna peč, Novo mesto, Ljubljana (2°-3° MCS)  
Io=5° MCS, Macroseismic ray R=50 km.
- Macroseismic data: Trebnje :5° MCS, Mirna peč: 5°;  
Novo mesto:5°, Velika lokã/Trebnje: 5°, Mirna: 4°;  
Soteska: 4°, Mokronog: 4°, Dobrnič/Novo mesto: 4°;  
Škocjan/Novo mesto:4°, Žužemberk: 4°, Podturen: 3.5°

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- 22 (cont.) Trebelno: 3.5° MCS, Boštajn: 3.5°, Sela/Šumberk  
3.5°, Dolenjske toplice: 3-3.5°, Stopiče/Novo mesto:  
3°, Šentvid/Stična: 3°, Šmarjeta/Ašimke toplice: 3°,  
Vel. Sirje/Zid.most: 2°, Negative: Šentjernej, Podbočje,  
Kostanjevica/Krka, Brestanica, Videm-Krško, Radeče,  
Zidani most, Šmartno/Litija, Muljava/Grosuplje, Semič,  
Šmarjeta/Novo mesto, Brežice.
- 22 iZ Pn 22 29 24.4, eiZ (Sn) 22 31 05.9, eZ! 22 32 42,  
(D= about 980 km).
- 23 iZ Pn 05 15 39.2, iZ 05 15 41.3, iZ! Pg 05 15 49.1,  
iZ X<sub>1</sub> 05 16 05.7, iZ Sn 05 16 18.5, iZ Sg 05 16 35.1,  
D= appr. 350 km, BCIS: H= 05 14 51, 43 N, 13.8 E,  
Central Italy.
- 23 eiZ (Pn) 05 24 28.2, eiZ 05 25 24.3, D= about 350 km,  
Italy -aftershock?
- 23 iZ Pn 17 06 29.7, iZ! Pg 17 06 39.4, iZ 17 06 58.9,  
iZ Sn 17 07 07.9, iZ Sg 17 07 24.2, D= about 345 km,
- 23 iZ Pn 17 40 21.4, iZ Pg 17 40 30.3, iZ Sg 17 41 14.6,  
D= about 345 km, aftershock.
- 23 iZ Pn 20 12 17.7, iZ Sg 20 13 10.8, D= about 345 km,  
aftershock.
- 24 iZ 00 11 38.3, weak trace.
- 24 Z 01 19 03.8, weak trace, obscured by microseisms.
- 24 eZ PKP 02 25 41.1, iZ 02 25 51.2, eiZ 02 26 22.9,  
USCGS: H= 02 07 12.8, 9.7 S, 120.4 E, h about 33 km,  
Sumba Islands region. M= 6 1/4 (Pas), 6 (Pal), 5.4 (CGS).
- 24 eiZ P 12 49 50.9, iZ! 12 49 56.5, eE (PP) 12 50 42,  
iZ PP 12 50 46.4, iZ PPP 12 52 03.5, eiZ (S) 12 54 44,  
D= about 3200 km. BCIS: H= 12 44 01, 34.8 N, 48 E, M=  
5.7 (Quetta). Press: Western Iran. Damages at Zolmabad,  
Aharabad, Bisotoon, Sarmast. Twenty persons injured.  
USCGS: H= 12 44 03.2, 34.4 N, 47.9 E, h about 33 km,  
Western Iran, 20 injured and minor damage in Kangavar  
area. M= 5 1/2-5 3/4 (Pal), 5.2 (CGS).
- 24 iZ- Pn 16 13 54.4, iZ! Pg 16 14 04.3, iZ Pg Pg 16 14  
07.3, iZ X 16 14 27.3, iZ! Sg 16 14 47.4, iZ SgSg 16  
14 52.3, iZ 16 15 (00), D= 355 km.
- 24 iZ Pn 21 27 40.3, iZ! Pg 21 27 47.3, iZ Sn 21 28 10.8,  
eiZ Sg 21 28 20.7, D= 280 km, weak.
- 24 eiZ P 21 47 40.1, iZ 21 47 47.9, USCGS: H= 21 35 24.4,  
51.8 N, 178.1 W, h about 57 km, Andreanoff Islands,  
Aleutian Islands. M= 6 (Pas), 5 (Pal), 5.5 (CGS).
- 25 eZ PKP 20 36 47.0, iZ 20 37 11.9, USCGS: H= 20 17 03.8,  
56.3 S, 149.9 E, h about 39 km, Macquarie Islands  
region. M= 5.0 (CGS).
- 25 iZ- P 22 58 45.7, iZ 22 58 55.8, Z PP 23 02 (01),  
USCGS: H= 22 46 12.2, 0.7 N, 96.5 E, h about 30 km,  
Off southwest coast of Sumatra. M= 5.6 (CGS). D= 9.350  
km.



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- 26 Z 01 13 14- 15, weak traces.
- 26 eZ P or PKP 05 51 50.2, eZ 05 53 13.8.
- 26 eZ+ PKP<sub>1</sub> 10 08 12.7, iZ 10 08 21.6, eiZ 10 08 30.2, iZ! 10 09 10.0, eiNE 10 09 13, iZ PP 10 12 47.3, eNE L 11 12 -; D= 17.850 km. USCGS: H= 09 48 19.7, 29.7 S, 177.8 W, h about 45 km, Kermadec Islands. Felt: Raoul Island. M= 6 3/4-7 (Pas), 7 (Brk), 7 (Pal), 7 1/2 (Tri).
- 26 eZ PKP<sub>1</sub> 13 44 56.6, eiZ 13 45 04.0, iZ 13 45 14.8, eZ PP 13 49 29.5, eiZ 13 50 04.5, D= 17.850 km. USCGS: H=13 25 02.6, 29.8 S, 177.9 W, h about 42 km, Kermadec Islands. M= 7 1/4 (Pas), 6 1/2 (Pal), 5.9 (CGS).
- 26 iZ P 19 59 48.3, eiZ 19 59 55.7, USCGS: H= 19 47 46.0, 44.4 N, 146.7 E, h about 110 km, Kurile Islands. M= 5.6 (CGS).
- 26 (ei)Z Pn 20 50 45.8, eiZ Sn 20 50 17.9, iZ Sg 20 51 29.0, D= about 295 km.
- 26 eiZ+ P 21 47 02.6, iZ 21 47 16.6, eZ PP 21 50 17.7, eNE L 22 18 -; USCGS: H= 21 34 41.1, 36.0 N, 135.7 E, h about 33 km, Near east coast of Honshu, Japan. Minor damage in Central Honshu. M= 6 1/2 (Pas), 6 1/2 (Brk), 6-6 1/4 (Berk), 5.9 (CGS), 6 1/4 (Tri), D= 9.150 km.
- 27 eiZ P or PKP 10 31 10.7, weak trace.
- 27 eiZ Pn 11 38 51.4, iZ! Pg 11 38 58.9, iZ Sg 11 39 28.6, iZ 11 39 51.8, D= 270 km, weak.
- 27 iZ Pn 11 43 30.4, iZ Pg 11 43 37.0, eiZ Sg 11 44 06.9, iZ 11 44 28.6, D= 270 km, weak, aftershock.
- 27 eZ 12 15 40.2, eiZ 12 15 49.0, eZ 12 16 21.5, weak.
- 27 iZ Pn 22 25 11.7, iZ! Pg 22 25 21.9, iZ X<sub>2</sub> 22 25 54.1, iZ Sg 22 26 06.2, iZ! SgSg 22 26 12.5, iZ! 22 26 20.7, D= about 360 km.
- 28 eiZ! P 00 21 33.7, iZ! 00 21 42.4, iZ! 00 21 56.4, eiZ PP 00 22 22, eiZ PPP 00 22 36.1, eNE S 00 26 12, eiZNE L 00 33 45, eZ M 00 35.3: Tz=12, Az=87, D= about 3000 km, BCIS: H= 00 15 46, 66.3 N, 19.4 W, (Determination by electronic calculating machine), M= 7-7 1/2 (Stras), Press: Near northern coast of Iceland. Light damage in Northern Iceland. (Sigluf Jordur region). Three injured. USCGS: H= 00 15 47.5, 66.3 N, 19.6 W, h about 15 km, Iceland. Light damage and several injured in northern Iceland. M= 7-7 1/4 (Pal), 6 1/2 (Brk);
- 28 iZ P 00 32 11.8 (weak), iZ PP 00 32 57.8, disturbed by previous earthquake. D= about 3000 km, aftershock. USCGS: H= 00 26 27, 66.3 N, 20.2 W, h about 33 km, Iceland. M= 4.6 (CGS).
- 28 eiZ PKP 11 32 26.4, USCGS: H= 11 12 31.3, 30.2 S, 177.8 W, h about 38 km, Kermadec Islands.
- 29 iZ Pn 01 33 23.3, iZ Pg 01 33 34.4, iZ 01 33 44.2, iZ! 01 34 (00), iZ! Sg 01 34 18.6, iZ! SgSg 01 34 24.0,

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- 29 (cont.) D= about 360 km (corrected value), BCIS: H= 01 32 34, 43.1 N, 13.0 E, Appenins. Some shocks felt at Camerino (Marche) and Gualdo Tadino (Umbria), Italy.
- 29 iZ Pn 03 11 39.3, iZ PgPg 03 12 26.3, eiZ 03 14 45.2, eiZ SgSg 03 14 57.6, iZ M 03 15 26.5, BCIS: H= 03 09 09, 40 1/4 N, 26 1/2 E, Turkey. Istanbul-Kandilli: Near Dardanelles Strait, felt at Cannakaie. USCGS: H= 03 09 11.2, 40.4 N, 26.6 E, h about 33 km, Northwestern Turkey. Felt: Cannakaie. M= 4.4 (CGS). D= 1170 km.
- 30 eiZ PKP 02 12 49.3, iZ!! 02 12 52.0: Tz=1.7, Az=2.5, iZ pPKP 02 13 31.8, iZ! 02 13 40.6, Z! 02 14 (00) in minute interruption, iZ! PP 02 16 14.4, USCGS: H= 01 53 28.8, 19.1 S, 169.1 E, h about 160 km, New Hebrides Islands. Felt: Port Vila, Tanna and Anatom. M= 6.1 (CGS), D= 16.250 km.
- 30 iZ Pn 10 58 29.2, iZ! Sg 10 58 58.3, iZ! 10 59 05.9, D= 215 km, weak, obscured by microseisms.
- 30 iZ+ P 17 04 10.2, eiZ 17 04 16.4, iZ! 17 04 28.6, weak traces. USCGS: H= 16 51 56.6, 44.2 N, 148.0 E, h about 33 km, Kurile Islands. M= 5 1/4- 5 1/2 (Pal), 6.3 (CGS).
- 31 iZ P or PKP 01 52 28.6, iZ 01 52 32.6, obscured by microseisms.
- 31 eZ PKP 05 50 43.3, eZ! 05 50 58, eiZ! 05 51 30.8, USCGS: H= 05 30 49.3, 29.9 S, 177.7 W, h about 48 km, Kermadec Islands. M= 6 1/4- 6 1/2 (Pas), 6 1/2 (Berk), 6-6 1/4 (Pal), 5.7 (CGS).
- 31 eiZ P 15 02 46.2, eiZ 15 03 (01) in minute interruption BCIS: H= 14 58 06, 35 1/2 N, 8 1/4 W, Atlantic Ocean, W from Strait of Gibraltar. USCGS: H= 14 58 02.4, 35.1 N, 9.3 W, h about 33 km, Off coast of Morocco.
- 31 iZ P 17 41 19.6, iZ 17 41 31.9, obscured by microseisms. USCGS: H= 17 28 52.7, 0.8 N, 96.6 E, h about 33 km, Nicobar Islands region.
- 31 eiZ PKP 19 42 47.7, iZ 19 43 05.8, USCGS: H= 19 22 53.3, 30.0 S, 178.0 W, h about 50 km, Kermadec Islands. M= 6 1/4- 6 1/2 (Pas), 6 1/2 (Bks), 5.8 (CGS).

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V. Ribarič