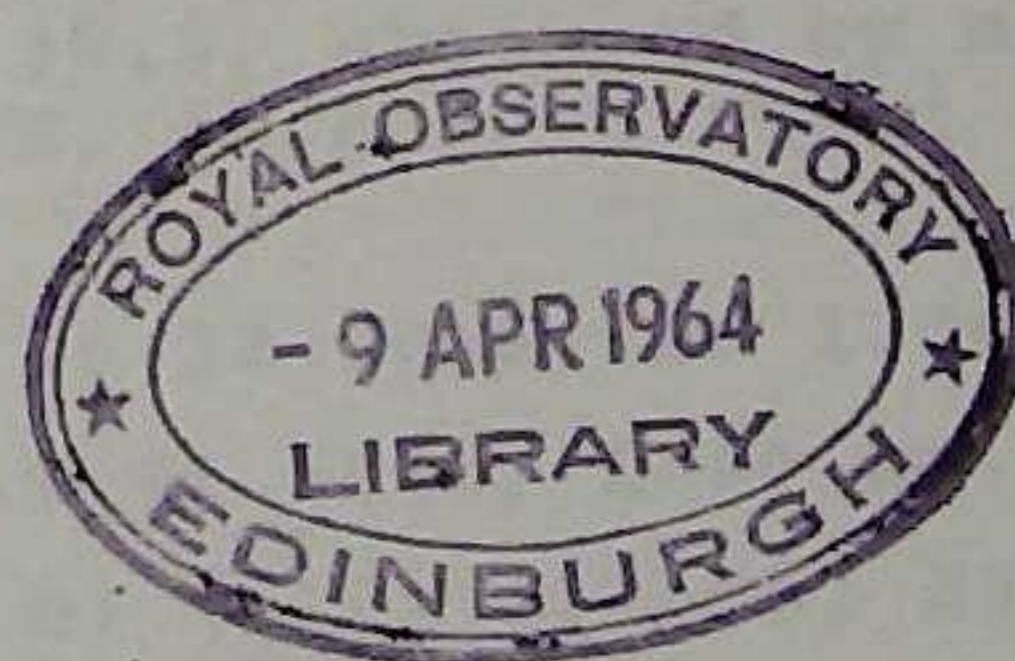


1963

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

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

(April 1963-June 1963)



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



PRELIMINARY SEISMOLOGICAL BULLETIN
 from April 1, 1963 to June 30, 1963

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.V.1963):

Component:	T_0	$v:1$	r/T_0^2	V
N-S	4.9	2.7:1	0.023	59
E-W	4.9	2.8:1	0.020	61

Hiller-Stuttgart, vertical component Z with galvanometrical
 recording; $T_0=1.5$ sec, $T_1=1.5$ sec, $D_1=D_2=1$,
 $V_{max}=10.150 \times$, velocity^g 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 north 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. Where-
 ever possible time readings up to one tenth of a
 second are given.

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- 1 iZ P 09 31 23.4, iZ 09 32 30.5, obscured by microseisms,
 USCGS: H= 09 22 51.8, 35.4 N, 69.8 E, h about 100 km,
 Hindu Kush, $M=4.8$ (CGS).
- 1 iZ Pg 15 32 02.1, iZ (Sg) 15 32 20.2, $D= 1.36^{\circ} =150$ km.
- 1 iZ Pg 19 41 50.0, iZ! Sg 19 41 58.8, $D=66$ km.
- 1 iZ Pn 23 04 38.5, iZ Pg 23 04 46.2, eiZ(Sn) 23 05 08.1,
 eiZ! Sg 23 05 21.0, $D=$ about 310 km.
- 1 iZ Pn 23 16 55.8, iZ Pg 23 17 02.5, eiZ (Sn) 23 17 26.3,
 iZ Sg 23 17 37.2, $D=$ about 2.6° .

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- 2 iZ 10 45 25.1, iZ 10 48 27.6.
- 2 iZ P 16 30 55.9, iZ pP 16 31 37.4, USCGS: H= 16 18 55.6, 53.2 N, 171.7 W, h about 142 km, Andreanof Isl., Aleutian Islands. M=6 1/4-6 1/2 (Pas), 5 1/2 (Berk), 5.7 (CGS). D= about 9.000 km.
- 4 iZ Pn 07 32 46.6, iZ Pg 07 32 55.8, iZ 07 32 59.5, iZ 07 33 19.6, iZ Sg 07 33 29.2, eiZ 07 33 48.5, D= about 2.7° (corr. value).
- 4 eZ 16 36 54, traces.
- 5 iZ Pn 13 49 52.9, eiZ Pb 13 49 56.8, iZ! 13 50 04.1, iZ! 13 50 07.9, iZ(Sn) 13 50 25.3, iZ Sb 13 50 33.0, iZ! Sg 13 50 40.4, iZ! 13 50 42.4, iZ! 13 50 55.2, D= 315 km. BCIS: H= 13 49 07, 44 1/4 N, 11 1/4 E, Italy. Appenins S of Bologna.
- 6 iZ+ PKP 07 21 56.5, weak traces. USCGS: H= 07 03 06.5, 17.5 S, 178.9 W, h about 526 km, Fiji Islands, M=5.1 (CGS).
- 6 (ei)Z Pn 09 48 57.3, eiZ 09 51 08.0.
- 6 eZ P 11 30 22, obscured by microseisms, USCGS: H= 11 19 23.3, 63.4 N, 149.5 W, h about 39 km, Central Alaska. M=5.5 (CGS).
- 7 eiZ P 15 20 32.3, USCGS: H= 15 07 34.9, 27.0 N, 129.2 E, h about 33 km, Ryukyu Islands.
- 7 eiZ+ P 22 49 09.3, iZ 22 49 19.8, iZ pP 22 49 31.5, eiZ PP 22 52 50.8, eiZ (pPP) 22 53 08.1, eZ S 23 00 (04). USCGS: H= 22 36 03.4, 4.9 S, 103.2 E, h about 72 km, Near south-west coast of Sumatra. M=6.1 (CGS).
- 8 iZ 08 16 26.2, traces.
- 8 Z 08 55-57 weak traces.
- 8 iZ P 14 47 15.1, iZ 14 47 29.3, USCGS: H= 14 38 27.0, 27.7 N, 44.3 W, h about 33 km, North Atlantic Ocean, M=5.0 (CGS).
- 9 iZ-PKP₁ 02 21 08.8, iZ! PKP₂ 02 21 14.3, eiZ 02 23 26.8, USCGS: H= 02 02 25.1, 17.7 S, 178.7 W, h about 538 km, Fiji Islands. M=4.9 (CGS).
- 9 eiZ P or PKP 09 08 48.5, weak trace.
- 9 Z 20 33-35, traces, disturbed by microseisms.
- 10 iZ PKP 12 46 24.0, weak traces. USCGS: H= 12 27 35.8, 18.4 S, 177.7 W, h about 558 km, Fiji Islands region. M=4.4 (CGS).
- 10 iZ Pn 20 16 50.0, iZ Pg 20 16 52.1, iZ PgPg 20 16 56.3, iZ Sn 20 17 11.6, iZ Sg 20 17 15.8, D= 195 km, Wien: 47.5° N, 13.5° E, BCIS: H= 20 16 24, 47.6 N, 13.3 E, Tennengebirge, Austria. Felt: Salzburg, western Steiermark. Io=5-6 MCS(Wien); USCGS: H= 20 16 24.4, 47.6 N, 13.3 E, h about 40 km, Austria. Felt: Salzburg.
- 11 iZ Pg 12 42 25.4, iZ Sg 12 42 43.2, D= 1.3°

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- 12 iZ P 00 50 26.7, iZ 00 50 34.0, USCGS: H= 00 41 27.9, 31.9 N, 78.8 E, h about 33 km, Indes. M=5.4 (CGS).
- 12 iZ 04 17 37.9, weak traces, near.
- 12 eiZ- P 19 54 36.8, eZ 19 54 50, USCGS: H= 19 47 54.8, 79.6 N, 5.1 E, h about 33 km, Svalbard region, M= 5.2 (CGS).
- 12 (ei)Z PKP 21 08 03.3, eiZ PKP 21 08 05.8, iZ 21 08 23.4, USCGS: H= 20 48 16.7, 16.7 S, 173.7 W, h about 33 km, Tonga Islands, M=5.0 (CGS).
- 13 Z 00 01-05 weak traces.
- 13 iZ- P 02 34 09.1, iZ 02 34 17.5, eiZ 02 35 33.2, eZ PP 02 37 55, USCGS: H= 02 20 57.5, 6.2 S, 76.5 W, h about 125 km, Peru, M=6 3/4-7 (Pas), 6.3 (CGS), D= 10.550 km.
- 13 eiZ 11 50 42, eiZ (Sg) 11 50 55, weak traces.
- 13 eiZ P or PKP 13 05 36.7,
- 13 iZ Pg 13 39 45.4, iZ! 13 39 46.9, iZ! Sg 13 39 48.5, D= 0.2°.
- 13 eZ PKP 14 49 59.4, eZ 14 50 11.2, eiZ PP 14 51 05.2, USCGS: H= 14 31 21.0, 3.4 S, 135.4 E, h about 31 km, Near north coast of New Guinea. M=5.6 (CGS).
- 13 eiZ(Pn) 17 21 26.7, iZ Sg 17 21 42.5, (D=1.16°).
- 13 eiZ Pn 18 53 04.8, eiZ Sg 18 54 48.5, D= 5.8°.
- 14 eiZ Pn 23 17 26.1, eiZ Sn 23 19 06.0, D= about 8.6°.
- 15 eiZ Pn 06 39 45.1, eiZ Sg 06 40 46.3, D= about 3.5°.
- 15 eiZ PKP 23 59 15.5, iZ PKIKP 23 59 21.5, iZ 23 59 36.2, USCGS: H= 23 39 27.3, 18.3 S, 173.7 W, h about 33 km, Tonga Islands. M=5.0 (CGS).
- 16 eZ P 01 43 40.5, (weak); eiZ PKP 01 47 14.6, eiZ N PP 01 48 05.7, eZ PPP 01 50 21, eNE 01 54 26, eiZ S 01 55 37.6, USCGS: H= 01 29 19.4, 0.8 S, 128.0 E, h about 33 km, M= 7.0 (Pas), 6.1 (CGS), 7 1/2-7 3/4 (Tri), Halmahera region.
- 16 eZ PP 01 55 49, USCGS: H= 01 36 59.4, 1.2 S, 128.4 E, h about 33 km, Halmahera region, M=6.3 (CGS).
- 16 eiZ PKP 02 13 07.3, eiZ! PP 02 13 54.0, eiZ! 02 14 12.5, USCGS: H= 01 55 10.9, 0.7 S, 128.0 E, h about 32 km, Halmahera region. M=6.0 (CGS), obscured by previous shock.
- 16 eiZ PKP 05 50 49.1, USCGS: H= 05 31 59.2, 18.4 S, 177.7 W, h about 557 km, Fiji Islands region. M=4.5 (CGS).
- 16 (e)Z 12 21 56.6, eiZ PP 12 22 26.4, USCGS: H= 12 03 42.5, 1.0 S, 127.6 E, h about 33 km, Halmahera region. M=4.7 (CGS).
- 16 eiZ P 18 52 24.4, eiZ 18 53 10.5, USCGS: H= 18 47 08.8, 35.4 N, 44.3 E, h about 104 km, Iraq, M=5.2 (CGS).
- 17 eiZ+ PKP₁ 02 31 09.5, iZ! 02 31 15.6, iZ! 02 31 24.3, eiZ! 02 31 30.8, USCGS: H= 02 11 26.1, 19.6 S, 178.6 E,

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- 17 (cont.) h about 33 km, Fiji Islands. M=6 1/2 - 6 3/4
(Pas), 6 (Berk), 5.9 (CGS), D= about 16.700 km.
- 17 eiZ PKP 08 43 04.5, iZ! 08 43 08.9, USCGS: H= 08 23
34.0, 15.7 S, 174.1 W, h about 124 km, Samoa Islands.
M= 5.1 (CGS).
- 17 eiZ 10 53 24.2, weak traces.
- 17 eiZ 12 33 28.7, iZ 12 33 42.8, traces.
- 18 eiZ PKP 02 10 44.5, iZ 02 10 51.8, USCGS: H= 01 51
55.2, 20.3 S, 177.7 W, h about 530 km, Fiji Islands
region. M=4.5 (CGS).
- 19 eZ 07 35 49, eiZ (Sn) 07 36 12.3, iZ 07 36 18.2,
USCGS: H= 07 30 19.2, 35.3 N, 25.2 E, h about 47 km,
Creta.
- 19 eiZ+ P 07 45 31.1, iZ+! 07 45 32.3, eNE 07 45 34,
iZ 07 45 44.8, eiZ! PP 07 47 43.6, eNE 07 47 49,
eZ PPP 07 49 13, eNE 07 54 03, USCGS: H= 07 35 23.7,
35.8 N, 96.9 E, h about 33 km, Tsinghai Province, China.
M=7 (Pas), 6 3/4 -7 (Berk), 6.1 (CGS).
- 19 eiZ Pn 17 46 35.4, eZ (Sg) 17 48 42.
- 19 iZ+ Pn 19 54 51.3, iZ(Pg) 19 55 01.4, iZ! 19 55 11.8,
iZ Sg 19 55 34.2, iZ! 19 55 38.9, D= 2.75°, BCIS: H=
19 54 08, 43.3 N, 13.9 E, Adriatic Sea, Felt: Macerata,
Ancona, Chiavarolle (Marche)-(ING Roma).
- 20 Z (Pn) 00 46 (ol) in minute interruption, eZ 00 47 33,
USCGS: H= 00 43 55.9, 38.6 N, 20.7 E, h about 48 km,
Off west coast of Greece.
- 20 eiZ P 20 44 11.8, weak trace, USCGS: H= 20 32 26.2,
52.3 N, 159.5 E, h about 33 km, Off coast of Kamchatka,
M= 5.0 (CGS).
- 20 eiZ Pn 21 01 28.4, eZ 21 02 20.5, weak.
- 20 eiZ Pg 23 41 36.7, eiZ Sg 23 41 52.4, D= 1.2°
- 21 eiZ PKP 01 17 35.3, USCGS: H= 00 57 56.6, 16.6 S,
178.3 W, h about 33 km, Fiji Islands region. M=4.6
(CGS).
- 21 eZ+ P 04 50 50, eiZ 04 50 53.1, USCGS: H= 04 38 21.7,
24.1 N, 122.1 E, h about 33 km, Near east coast of
Formosa, M=5.2 (CGS).
- 22 eiZ P 00 59 44.9, USCGS: H= 00 51 09.0, 31.5 N, 74.0
E, h about 37 km, Western Pakistan. Felt: Lahore.
- 22 eZ P or PKP 07 45 25.5.
- 22 eiZ P 15 42 30.3, eZ 15 42 38.0, USCGS: H= 15 38 19.1,
41.3 N, 39.0 E, h about 33 km, Black Sea, M=5.3 (CGS).
- 22 eiZ P or PKP 18 56 39.6, eiZ 18 56 45.5.
- 23 eiZ P 03 01 13.7, eZ 03 01 45.8, eiZ 03 03 20.7,
USCGS: H= 02 51 17.2, 46.9 N, 103.7 E, h about 33 km,
Outer Mongolia. M=5.3 (CGS).
- 23 eiZ P or PKP 06 44 37.5.

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- 23 eiZ P 10 06 09.0, eiZ 10 06 16.4, USCGS: H= 09 55 06.8
25.7 N, 99.5 E, h about 33 km, Yunnan Province, China,
M=5.1 (CGS).
- 23 iZ+ Pn 14 04 12.8, iZ! 14 04 13.8, iZ Pb 14 04 22.6,
iZ! Pg 14 04 35.4, iZ X₁ 14 04 46.0, iZ! X₂ 14 04
58.1, iZ Sn 14 05 14.7, iZ Sb 14 05 32.3, iZ! 14 05
37.3!, iZ! Sg 14 05 44.0, iZ 14 05 55.2, eiNE 14 05
56.5, D=5.22°=580 km. BCIS: H= 14 02 56, 42.3 N, 19.5
E, Border region Albania-Yugoslavia, Skutari Lake.
Ljubljana: felt 5° at Titograd (42° 26' N, 19° 17' E),
felt: iivat, Bar, Hercegnovi, Cetinje. Macro seismic ray
about 80 km. USCGS: H= 14 02 56.8, 42.6 N, 19.5 E,
h about 38 km, Yugoslavia-Albania border. M=5.1 (CGS).
- 23 eiZ Sn 14 07 33.2, obscured by previous shock. BCIS:
Yugoslavia-Albania border aftershock, H=14 05 14.
- 23 iZ Pn 14 15 46.9, iZ Pg 14 16 09.8, iZ Sn 14 16 46.9,
iZ 14 17 09.0, iZ Sg 14 17 17.0, D= 580 km, aftershock.
BCIS: H= 14 14 30.
- 23 eiZ 18 54 37.4, eiZ 18 54 45.3, weak traces.
- 24 eiZ (Pg) 02 29 22.7, eZ 02 29 37.7, weak.
- 24 eiZ+ PKP 04 14 37.4, USCGS: H= 03 55 06.6, 17.2 S,
174.5 W, h about 190 km, Tonga Islands. M= 4.7 (CGS).
- 24 eiZ P 13 44 52.2, iZ 13 45 03.4, USCGS: H= 13 32 12.2,
27.0 N, 128.8 E, h about 33 km, Ryukyu Islands. M=
5.1 (CGS).
- 24 Z 20 30.3 weak traces, iZ 20 31 04.9.
- 24 (e)Z PKP₁ 22 01 30.5, iZ PKIKP 22 01 38.0, iZ PKP₂
22 01 51.8, USCGS: H= 21 42 49.0, 20.8 S, 179.1 W,
h about 603 km, Fiji Islands region. M=5.1 (CGS).
- 25 iZ Pn 06 06 48.5, eiZ Pg 06 07 09.7, iZ 06 07 18.4,
eiZ (X₂) 06 07 36.6, iZ Sn 06 07 49.4, eiZ! 06 07
57.2, eiZ (Sb) 06 08 10.2, iZ Sg 06 08 17.4, iZ
06 08 40.5, D= 5.2°=575 km. (corrected value).
BCIS: H= 06 05 34, 42.4 N, 19.6 E, Border region
Albania-Yugoslavia, Skutari Lake. USCGS: H= 06 05
32.2, 42.4 N, 19.4 E, h about 44 km, Yugoslavia-
Albania border.
- 25 eZ P or PKP 11 19 26.
- 25 eZ PP 08 29 47, USCGS: H= 08 12 57.2, 4.7 N, 122.4 E,
h about 610 km, Celebes Sea. M=5.5 (CGS).
- 25 iZ Pg 12 56 06.7, eiZ! Sg 12 56 21.7, D=1.1°.
- 25 iZ Pn 13 37 48.5, iZ (Pb) 13 37 58.6, eiZ Pg 13 38 14.6,
eiZ 13 38 43.4, eiZ Sn 13 38 58.5, iZ 13 39 11.2, eiZ
Sg 13 39 37.8, D=6.5°, BCIS: H= 13 36 11, 44° 57' N,
5° 42' E, France, Deptm. of Isere, south of Grenoble
with slight damage at Monestir -de-Clermont.
d'Aveillans, Nantes-en-Rattier. USCGS: H= 13 36 14.2,
45.2 N, 5.9 E, h about 33 km, Northeast France.
Slight damage at Monestir -de-Clermont, La Motte d'
Aveillans, Nantes-en-Rattier.

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- 25 eiZ PKP 16 54 53.8, weak trace. USCGS: H= 16 35 56.2, 1.3 S, 128.7 E, h about 33 km, Halmahera region. M= 5.3 (CGS).
- 25 iZ Pg 17 33 56.2, iZ Sg 17 34 06.9, D= 0.8°
- 25 eiZ PKP₁ 18 09 31.4, iZ! 18 09 40.3, USCGS: H= 17 50 25.3, 21.6 S, 178.0 W, h about 380 km, Fiji Islands, M= 5.0 (CGS).
- 26 (ei)Z Pg 00 56 15.8, iZ Sg 00 56 25.0, D= 0.66°
- 26 iZ Pg 06 08 02.7, iZ Sg 06 08 14.8, D= 0.9°
- 26 eiZ P 23 57 32.3, eiZ 23 57 38.3, USCGS: H= 23c45 01.2, 24.1 N, 122.5 E, h about 33 km, Off east coast of Formosa. M= 4.9 (CGS).
- 27 (e)Z P 03 48 16, USCGS: H= 03 42 33.9, 66.7 N, 19.2 W, h about 33 km, Off coast of North Island. M= 4.7 (CGS).
- 27 eiZ Pn 05 29 54.7, eiZ 05 31 04.2, USCGS: H= 05 28 19, Vercors, Felt: St. Paul les Monestiers, Pellafol-Sarcenas.
- 27 iZ Pg 21 21 52.5, eiZ Sg 21 22 05.1, D=0.9°, weak.
- 28 eiZ P 00 44 54.1, eZ S 00 46 51.9, USCGS: H= 00 42 11, 40.5 N, 27.4 E, h about 160 km, Northwestern Turkey.
- 28 eiZ PKP 15 45 18.7, USCGS: H= 15 25 30.3, 17.6 S, 174.5 W, h about 60 km, Tonga Islands. M=4.7 (CGS).
- 28 eiZ P 19 59 45.5, USCGS: H= 19 50 11.4, 36.1 N, 71.3 E, h about 150 km, Hindu Kush. M=4.8 (CGS).
- 29 eiZ PKP₁ 15 11 39.3, iZ 15 11 48.2, USCGS: H= 14 51 52.9, 63.9 S, 159.5 E, h about 33 km, Balleny Islands region.
- 29 eiZ P or PKP 18 26 21.7.
- 29 eZ+ P 21 56 32, eiZ 21 56 34.6, eiZ PP 21 59 44.4, USCGS: H= 21 44 17.1, 51.4 N, 178.6 E, h about 60 km, Andreanoff Islands, Aleutian Islands. M=6 (Pas), 5-5 1/4 (Berk), 6 (Pal), 5.6 (CGS). D= about 9.050 km.
- 30 eZ 01 16 09, eiZ PKP 01 16 53.2, eZ PP 01 17 10, eZ 01 19 30, USCGS: H= 00 58 18.3, 0.7 S, 129.0 E, h about 33 km, Halmahera region. M= 6 3/4 (Pas), 6 1/2 (Pal), 5.6 (CGS).
- 30 iZ+ Pn 05 22 39.8, eiZ 05 22 57.4, eiZ Sn 05 24 08.8, iZ 05 24 46.6, USCGS: H= 05 20 48.0, 39.9 N, 20.9 E, h about 33 km, Albania-Greece border. D= about 840 km.
- 30 eiZ PKP 08 45 49.1, USCGS: H= 08 26 22.7, 17.1 S, 175.1 W, h about 219 km, Tonga Islands. M=4.9 (CGS).
- 30 eZ 10 32 35, weak traces.

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- 1 eiZ - PKP₁ 10 22 42.2, iZ! 10 22 44.1, iZ! 10 22 51.1, iZ! pPKP₁ 10 23 21.7, eiNE pPKP₁ 10 23 22, iZ!! 10 23 26.2, iZ! 10 23 35.5, Z! 10 24 (00), eiZ PP 10 25 53.1, eiZ pPP 10 26 28.5, eiZ! 10 26 41.3, eZ! 10 30 43. USCGS: H= 10 03 20.0, 19.0 S, 169.0 E, h about 140 km, New Hebrides. Felt: 7 (Pas), 6 3/4 - 7 (Brk), 6.2 (CGS). D= about 16.250 km.
- 1 eiZ P 20 00 24.5, USCGS: H= 19 52 22.0, 38.4 N, 75.4 E, h about 145 km, Sinkiang Province, China. M=4.3 (CGS).
- 2 iZ Pg 09 11 44.2, iZ Sg 09 12 03.7, weak, D= 1.46°
- 2 eiZ 10 56 21.8, weak trace, near.
- 3 eiZ P 10 51 03.2, USCGS: H= 10 44 28.0, 30.7 N, 51.7 E, h about 25 km, Iran. M=5.3 (CGS).
- 3 iZ PKP₁ 11 14 28.3, eiZ PKP₂ 11 14 36.7, USCGS: H= 10 54 43.0, 15.0 S, 173.3 W, h about 33 km, Tonga Islands. M=5.0 (CGS).
- 3 iZ Pn 23 17 45.2, eiZ (Sn) 23 18 32.3, eiZ 23 18 44.0 (D=about 3.9°) obscured by microseisms.
- 4 eiZ Pn 16 49 52.3, iZ 16 50 10.4, iZ (Sn) 16 51 04.6, eiZ 16 51 29.6, D= about 6.0°.
- 5 eiZ PKP 17 31 35.4, eiZ 17 31 36.7, eiZ! 17 31 56.3, USCGS: H= 17 11 47.2, 17.5 S, 173.7 W, h about 33 km, Tonga Islands. M= 5.0 (CGS).
- 6 iZ Pn 19 32 24.5, iZ (Pg) 19 32 58.5, iZ 19 33 46.3, iZ Sn 19 33 57.7, iZ 19 34 31.0, iZ (Sg) 19 34 46.1, D= 880 km (corr. value). BCIS: H= 19 30 29, 39.1 N, 20.7° E, Greece. Gulf of Arta. USCGS: H= 19 30 28.2, 39.5 N, 20.6 E, h about 33 km, Greece-Albania border. M=5.1 (CGS).
- 7 eiZ P or PKP 00 10 39.3, iZ! 00 10 40.2.
- 7 iZ Pg 06 45 03.0, iZ Sg 06 45 18.0, very weak, D= 120 km.
- 7 eiZ+ Pg 11 14 52.1, iZ! 11 14 54.0, iZ! Sg 11 15 06.7, iZ SgSg 11 15 11.0, iZ! 11 15 20.9, eiZ 11 15 37.1, F 11 16 -; D= 115 km. Felt: Zagreb.
- 7 iZ Sg 13 00 41.3, weak trace, near.
- 8 iZ- Pn 02 09 35.8, iZ Pg 02 09 36.9, iZ! PgPg 02 09 40.2, iZ Sg 02 10 08.0, F 02 14 -; D= 180 km. BCIS: H= 02 09 11, 46.0 N, 12.3 E, North Italy, Venetian Alps. USCGS: H= 02 09 07.6, 46.0 N, 12.1 E, h =about 34 km, Northern Italy. ING Roma: Vicentino Hill region. South of Belluno. Felt 4° MCS at Belluno and surroundings. Epicenter: 46° 06' 6" N, 12° 15.2' E.
- 8 iZ+ P 10 34 40.9, iZ pP 10 34 54.2, Z PP 10 38 (00).

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- 8 (cont.) eZ S 10 45 09, USCGS: H= 10 22 11.2, 36.6 N, 141.0 E, h about 53 km, Honshu, Japan. M= 6.1 (CGS), D= about 9.450 km.
- 8 iZ Pg 13 34 13.6, iZ Sg 13 34 22.6, D= 0.66°, weak.
- 8 Z 18 32 (00) traces.
- 8 eiZ PKP 19 35 09.0, USCGS: H= 19 15 39.7, 17.2 S, 175.0 W, h about 199 km, Tonga Islands region. M=4.6 (CGS).
- 9 iZ Pn 05 44 40.6, eiZ 05 45 20.0, eiZ 05 45 44.4, weak traces.
- 9 Z 08 47-48, traces.
- 9 (ei)Z P 15 19 15.8, eiZ (PP) 15 21 18.7, eZ 15 22 39, USCGS: H= 15 06 24, 12.7 N, 86.6 W, h about 33 km, Nicaragua.
- 10 eiZ PKP₁ 04 48 19.8, eiZ 04 48 33.4, iZ 04 48 38.5, eiZ 04 49 16.9, USCGS: H= 04 28 41.8, 20.0 S, 168.1 E, h about 33 km, Loyalty Islands. M= 4.9 (CGS). D= about 16.250 km.
- 10 eiZ P 11 21 05.3, iZ 11 21 11.2, USCGS: H= 11 09 41.6, 8.4 S, 67.6 E, h about 33 km, Indian Ocean, M= 5.9 (CGS).
- 10 iZ P or PKP 14 57 22.9, eiZ+ 14 57 25.7, iZ! 14 57 14 57 28.1
- 10 iZ 18 09 55.0, Z 18 10 (00) in minute interruption.
- 10 eiZ- P 22 35 54.7, eiZ PP 22 39 33.6, USCGS: H= 22 22 42.2, 2.2 S, 74.5 W, h about 33 km, Ecuador. Felt. M=6 3/4 (Pas), 6 (Brk), 6 (Pal), 5.7 (CGS).
- 11 iZ Pn 01 13 54.8, eiZ 01 14 08.3, eZ (Sn) 01 15 25, eiZ 01 15 50.8, eiZ (SgSgSg) 01 16 29.0, (D= about 7.8°).
- 11 eiZ PKP₁ 05 03 16.8, iZ PKP₂ 05 03 21.1, USCGS: H= 04 44 19.4, 15.4 S, 177.1 W, h about 400 km, Fiji Islands. M=5.1 (CGS).
- 11 eiZ+ P 18 02 12.8, iZ 18 02 56.3, USCGS: H= 17 49 43.0, 24.2 N, 122.5 E, h about 33 km, Off coast of Formosa. M=4.5 (CGS).
- 11 eiZ P or PKP 19 06 07.6, weak traces.
- 12 eiZ PKP 10 02 45.8, eiZ 10 02 54.6, USCGS: H= 09 42 58.3, 57.5 S, 159.4 E, h about 44 km, Macquarie Islands region. M= 6.2 (CGS).
- 12 iZ- Pg 11 52 41.4, iZ 11 52 44.0, iZ! Sg 11 52 51.9, iZ! 11 52 57.5, iZ 11 53 03.0, D= 85 km. Felt: Sromlje near Brežice, Slovenia. (3°-4° MS); Sromlje: 45° 59' N, 15° 36' E. Zagreb: ePg 11 52 34, eSg 11 52 38, Trieste: iSg 11 53 12.3.
- 12 eiZ- P 20 20 26.7, iZ PcP 20 20 37.6, iZ 20 21 04.6, eiZ 20 21 57.9, eiZ PP 20 23 17.4, USCGS: H= 20 08 43.0, 57.4 N, 153.9 W, h about 80 km, Kodiak Island,

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- 12 (cont.) Alaska. M=5.9 (CGS). D= 8.450 km.
- 12 eiZ P 20 48 53.4, USCGS: H= 20 37 12.9, 55.9 N, 163.1 E, h about 33 km, Near east coast of Kamchatka. M= 5.1 (CGS).
- 13 iZ (Pn) 08 52 39.4, iZ! Pg 08 52 40.3, eiZ Sn 08 52 59.3, Z Sg 08 53 01.7, iZ 08 53 06.5, D= 165 km.
- 13 eiZ P 12 57 03.2, USCGS: H= 12 44 00.7, 14.5 N, 92.9 W, h about 60 km, Mexico-Guatemala border. M=4 3/4-5 (Brk), 5 1/4-5 1/2 (Pal), 5.6 (CGS).
- 13 eiZ P or PKP 13 44 18.3, weak.
- 13 iZ PKP₁ 14 27 08.1, iZ! 14 27 10.0, iZ pPKP 14 27 47.4, eiZ PP 14 30 33.6, USCGS: H= 14 07 46.8, 19.5 S, 169.3 E, h about 163 km, New Hebrides Islands. M=5.6 (CGS), Nouméa: H= 14 07 52, 19.6 S, 169.0 E, (h about 50 km). M=5 (Noméa). D= 16.250 km.
- 13 iZ Pn 16 04 02.9, iZ Pg 16 04 14.3, eiZ (Sg) 16 04 55.5, (D= about 3.3°). weak.
- 13 eiZ PKP 23 07 02.8, USCGS: H= 22 48 10.3, 6.0 S, 150.1 E, h about 94 km, New Britain region.
- 14 eiZ 11 39 04.8, iZ Sg 11 39 49.9, traces.
- 15 eiZ+ Pn 11 17 07.7, iZ! Pg 11 17 33.6, iZ (X₁) 11 17 50.6, iZ Sn 11 18 16.4, eiZ! 11 18 28.8, iZ! Sg 11 18 51.2, eiNE M 11 19 06, D= about 650 km. BCIS: H= 11 15 40, 41.7 N, 20.1 E, h normal, Beograd: felt 4-5° Debar (41°31' N, 20° 32' E). Skopje: felt 3° MCS at Skopje. USCGS: H= 11 15 39.5, 41.8 N, 20.2 E, h about 33 km, Albania. M=4.4 (CGS).
- 15 eiZ P 12 14 27.2, eiZ 12 14 34.2, BCIS: H= 12 08 11, 39 N, 26 3/4 W, Near Azores archipelago.
- 15 eiZ P 15 44 44.2, USCGS: H= 15 32 11.3, 24.1 N, 122.8 E, h about 33 km, Off east coast of Formosa, M=5.6 (CGS).
- 15 eiZ 19 14 27.4, weak trace.
- 16 eiZ PKP 01 47 45.9, USCGS: H= 01 28 04.7, 22.6 S, 171.6 E, h about 79 km, New Hebrides region. M= 4.8 (CGS).
- 17 eiZ P 04 18 50.4, USCGS: H= 04 06 36.2, 45.3 N, 150.8 E, h about 33 km, Kurile Islands. M= 5.9 (CGS).
- 17 eiZ P 06 22 06.2, eiZ 06 22 16.1, USCGS: H= 06 09 18.2, 15.7 N, 120.1 E, h about 80 km, Near west coast of Luzon, Philippine Islands. M=5.5 (CGS).
- 17 eiZ PKP₁ 23 00 01.7, eiZ! PKP₂ 23 00 22.8, USCGS: H= 22 40 06.7, 24.4 S, 177.2 W, h about 70 km, Tonga Islands, M=5.9 (CGS).
- 18 eZ PP 05 52 02, eiZ 05 52 11.1, USCGS: H= 05 32 25.0, 29.6 S, 68.5 W, h about 29 km, La Rioja Province, Argentina.
- 18 iZ P 23 59 15.6, USCGS: H= 23 47 17.3, 49.5 N, 156.2 E, h about 70 km, Kurile Islands. M=5.5 (CGS).

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- 19 eiZ PKP 01 21 56.3, eiZ PP 01 23 28, eiZ 01 24 56, USCGS: H= 01 03 04.1, 46.5 S, 75.1 W, h about 33 km, Coast of southern Chile. M=6 3/4 (Pas), 6.5 (CGS).
- 19 iZ! NE Pg 10 00 07.9, NE: pens on Wiechert 200 kg horizontal thrown out of bearings, Z underexposed. Macro seismic epicenter: 46° 05' N, 14° 45' E, Litija-Kamnik region, Slovenia, Yugoslavia. Io=7° MCS, r₇=20 km, Ljubljana felt 6.5° MCS, Damage at Litija, Kamnik, Sostro, Laze, Gornji grad, Vače, 3 injured in Litija, broken chimneys. Several buildings damaged. Strong brontide. Felt: Trieste 5° MCS, Zagreb: 3.5° MCS, Rijeka, Koper, Celje, Maribor, Murska Sobota. BCIS: H=10 00 04, 46.0 N, 14.8 E, USCGS: H= 10 00 04.6, 46.0 N, 14.7 E, h about 33 km, Northwestern Yugoslavia. 3 injured in Litija, minor damage. M= 4.9 (CGS). Many aftershocks. Trieste: iPg 10 00 18.1, i!! Sg 10 00 30.9, D=92 km, A=65°. Zagreb: iPg 10 00 23, iSg 10 00 38 D=80 km. Sarajevo: eP 10 00 52, e(S) 10 01 43, Beograd: iPn 10 01 09.6, iPgPg 10 01 29.9, M 10 03 28.2. D=450 km.
- 19 iZ+ Pg 10 13 39.1, iZ! Sg 10 13 41.6, iZ 10 13 43.3, D= 22 km, Litija aftershock.
- 19 iZ+ Pg 10 15 50.3, iZ! Sg 10 15 52.6, iZ 10 15 54.3, (D= 20 km) Litija aftershock.
- 19 Z 11 02-04 traces.
- 19 iZ+ NE Pg 11 19 05.8, iZ! NE Sg 11 19 08.2, iZ 11 19 11.9, D= 21 km, aftershock Litija. Ljubljana felt 4° MCS.
- 19 iZ Pg 11 38 10.9, iZ! Sg 11 38 13.1, D= 20 km, aftershock Litija.
- 19 iZ! Pg 13 03 39.9, iZ!! Sg 13 03 42.1, D= 20 km, aftershock Litija, Ljubljana felt 3° MCS.
- 19 iZ Pg 13 12 18.5, iZ! Sg 13 12 20.8, D= 20 km, aftershock Litija.
- 19 iZ Pg 15 16 28.1 very weak, iZ Sg 15 16 30.2, aftershock Litija.
- 19 iZ (Sg) 15 46 50.5, near.
- 19 (ei)Z Pg 16 12 19.5, iZ Sg 16 12 21.6, D= 20 km, near, Litija aftershock.
- 19 iZ! Pg 16 18 25.0, iZ!! Sg 16 18 27.2, iZ 16 18 30.2, D= 22 km, Litija aftershock.
- 19 iZ Pg 17 33 47.5, iZ Sg 17 33 50.0, D= 25 km, Litija region aftershock.
- 19 eiZ 17 47 20.8, near trace, weak.
- 19 Z 18 47-50 traces.
- 19 eiZ Pn 20 05 10.8, iZ Pg 20 05 20.1, iZ Sn 20 05 46.8, (i)Z Sg 20 06 (00), iZ 20 06 19.0, D= 325 km.
- 19 iZ+NE Pg 21 12 07.4, iZ! NE Sg 21 12 09.8, D= 23 km, Litija region. Ljubljana felt: 3° MCS.
- 19 iZ Pg 21 31 03.4, iZ! Sg 21 31 05.3, D= about 20 km,

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- 19 (cont.) Litija region aftershock.
- 19 eiZ+ P 21 45 05.1, iZ 21 45 18.6, iZ PP 21 46 56.7, eiZ (PPP) 21 48 04, eiZ 21 48 22.0, eZ S 21 52 34, USCGS: H= 21 35 49.6, 23.8 N, 45.9 W, North Atlantic Ocean, M=6 1/2 (Pas), 6 1/4-6 1/2 (Brk), 6.0 (CGS).
- 19 iZ Pn 22 21 17.5, eiZ Pg 22 21 26.0, eiZ Sg 22 22 03.6, D= 310 km, weak.
- 19 iZ Pn 22 38 25.9, iZ Pg 22 38 37.0, iZ Sg 22 39 21.6, iZ 22 39 34.5, D= 365 km.
- 19 Z Sg 23 05 (00) in minute interruption, near, Litija?
- 20 iZ Pg 02 35 20.6, iZ! Sg 02 35 22.8, iZ 02 35 25.5, D= 23 km, Litija region aftershock.
- 20 eZ+ PKP₁ 11 57 58.0, iZ! 11 58 03.4, iZ 11 58 08.6, iZ 11 58 23.5, eiZ PKP₂ 11 58 42.5, iZ! 11 58 47.0, Z (PP) 11 02 (00) in minute interruption, USCGS: H= 11 38 00.9, 30.7 S, 178.3 W, h about 34 km, Kermadec Islands region. M=6 3/4-7 (Pas), 6 1/2 (Berk), 6.2 (CGS). D= about 17.900 km.
- 20 eiZ P 14 03 20.6, USCGS: H= 13 54 06.2, 24.1 N, 45.9 W, h about 33 km, North Atlantic Ocean. M=4.5 (CGS).
- 21 iZ Pg 19 29 49.0, iZ! Sg 19 29 51.1, D= 20 km, Litija region aftershock.
- 21 iZ Sg 22 07 28.5, near, Litija region aftershock.
- 22 iZ Pg 04 31 29.2, iZ Sg 04 31 31.4, D= 20 km, Litija aftershock.
- 22 iZ+ P 14 08 49.8, iZ 14 08 52.4, USCGS: H= 13 56 43.0, 48.6 N, 154.7 E, h about 22 km, Kurile Islands. M= 6 1/2 (Pas), 6 (Brk), 6.3 (CGS).
- 22 (e)Z 16 00 44, eiZ PP 16 01 05.7, traces, USCGS: H= 15 42 48.6, 4.3 N, 127.9 E, h about 58 km, Molucca Passage, M= 5.0 (CGS).
- 22 eZ PKP 22 11 10, eiZ 22 11 17.0, USCGS: H= 21 53 02.5, 8.2 S, 115.7 E, h about 33 km, Java Sea, M=5.6 (CGS).
- 23 eiZ+ PKP₂ 03 52 31.0, iZ! 03 52 34.0, eiZ (pPKP₂) 03 53 43.1, eiZ! 03 53 51.3, iZ! 03 54 (00). USCGS: H= 03 33 19.1, 15.0 S, 176.7 W, h about 279 km, Fiji Islands. M= 5.4 (CGS).
- 23 iZ Pg 05 36 57.1, Z! Sg 05 37 (00) in minute interruption, iZ! 05 37 03.2, D= 20 km, Litija region aftershock, Ljubljana felt: 3° MCS.
- 23 eZ P 07 55 10, eiZ 07 55 35.7, USCGS: H= 07 43 58.0, 19.2 N, 64.6 W, h about 55 km, Leeward Islands region, M=5.4 (CGS).
- 23 iZ Sg 13 01 08.9, weak, near.
- 23 eZ PKP 15 30 02, weak, USCGS: H= 15 12 05.7, 6.0 N, 126.1 E, h about 88 km, Near east coast of Mindanao, Philippine Islands. M=5.5 (CGS).

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- 23 iZ+ Pg 16 17 03.6, iZ! Sg 16 17 06.1, D= 25 km, Litija region aftershock. Ljubljana felt 2^o MCS.
- 24 iZ Pg 04 00 50.0, iZ Sg 04 00 52.2, D= 22 km, Litija aftershock.
- 24 iZ Pg 07 13 18.0, iZ Sg 07 13 36.9, D= 1.4^o, weak.
- 24 eiZ 13 48 22.2, traces.
- 24 iZ Pg 19 03 17.3, iZ Sg 19 03 18.4, D= 10 km, weak, not felt.
- 25 Z 05 53-54 traces.
- 25 eiZ+ P 08 53 17.3, eiZ 08 53 19.9, eiZ 08 56 26.2, USCGS: H= 08 41 09.6, 42.7 N, 144.3 E, h about 80 km, Near east coast of Hokkaido, Japan. M=5.4 (CGS).
- 25 iZ Sg 11 41 02.2, near, Litija aftershock.
- 25 eZ (Pn) 13 41 55, eiZ Sg 13 42 28.8, (D= 2.2^o).
- 26 eiZ PKP 00 19 51.9, eiZ 00 20 03.8, USCGS: H= 23 59 55.8, 19.7 S, 174.3 W, h about 33 km, Tonga Islands. M=5.3 (CGS).
- 26 (e)Z 18 01 30, traces.
- 26 iZ Sg 18 59 00.0, weak, near.
- 26 eiZ P 23 18 34.6, iZ 23 18 38.8, Z 23 19 (00), USCGS: H= 23 06 55.0, 55.2 N, 159.9 E, h about 47 km, M= 5 1/4-5 1/2 (Pal), 5.3 (CGS). Near east coast of Kamchatka.
- 27 eiZ P 04 10 25.6, eiZ 04 10 46.3, USCGS: H= 03 58 47.9, 55.3 N, 160.1 E, h about 54 km, Near east coast of Kamchatka. M= 5 1/4 (Pal), 5.7 (CGS).
- 27 eZ 09 31 07, traces.
- 27 iZ Pg 13 16 57.5, Z (Sg) 13 17 (00), Litija region aftershock.
- 27 eiZ Pn 21 19 56.3, eZ (PgPg) 21 20 44, eiZ 21 21 51.8, eiZ! 21 22 50.0,
- 28 iZ(Pn) 15 15 03.2, eiZ 15 15 57.1, traces.
- 29 eiZ+ P 00 54 36.7, iZ! 00 54 42.4, iZ! 00 54 57.6, USCGS: H= 00 47 50.8, 28.3 N, 52.2 E, h about 45 km, Iran, M=4.8 (CGS).
- 29 eiZ P 08 42 36.8, iZ! 08 42 54.0, eiZ 08 43 08.5, USCGS: H= 08 35 02.9, 27.2 N, 59.3 E, h about 33 km, Southern Iran. M=5.4 (CGS).
- 29 iZ PKP 08 46 35.2, USCGS: H= 08 27 44.5, 17.7 S, 178.8 W, h about 512 km, Fiji Islands. M=4.5 (CGS).
- 29 Z 10 37-38 traces.
- 29 iZ+ Pg 19 44 50.4, iZ! Sg 19 44 52.7, D= 23 km, Litija region aftershock.
- 30 eiZ PKP₂ 07 15 52.7, eiZ 07 16 02.4, USCGS: H= 06 56 09.3, 54.2 S, 143.7 E, h about 33 km, South of Australia.

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- 30 (cont.) M=5 1/4-5 1/2 (Pal).
- 31 iZNE Pg 03 36 10.4, iZ!NE Sg 03 36 12.8, D= 23 km, Litija region aftershock. Litija: 4-5^o MCS, Ljubljana: 2-3^o MCS, R=25 km. BCIS: H= 03 36 06, macroseismic epicenter: 46^o 03' N, 14^o 50' E. (Ljubljana).
- 31 eiZ PKP 06 23 20.9, eiZ 06 23 44.7, iZ 06 24 19.0, USCGS: H= 06 03 34.9, 15.1 S, 173.3 W, h about 33 km, Tonga Islands region. M= 4.8 (CGS).
- 31 eiZ Pn 17 19 27.2, iZ 17 20 26.1, weak trace.
- 31 iZ Pg 19 44 03.2, iZ! Sg 19 44 05.6, D= 23 km, Litija region aftershock.

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- 1 eZ+ PKP₁ 00 18 30, eiZ! 00 18 34.2, iZ PKP₂ 00 18 44.1, USCGS: H= 23 58 49.7, 15.1 S, 173.4 W, h about 33 km, Samoa Islands region. M= 5.4 (CGS).
- 1 iZ+ Pg 01 03 26.1, iZ! Sg 01 03 28.2, iZ 01 03 32.2, D= 20 km, Litija region aftershock. Ljubljana felt 2^o MCS.
- 1 eiZ 07 57 54.7, eiZ 07 59 02.9, near, traces.
- 1 eiZ P 10 57 48.0, iZ 10 57 51.3, eiZ 10 58 12.3, eiZ PP 10 59 33.1, USCGS: H= 10 49 54.8, 36.4 N, 71.5 E, h about 70 km, Hindu-Kush. M=5.3 (CGS). D=4.750 km.
- 1 eiZ PKP 12 50 38.2, eiZ 12 51 02.3, USCGS: H= 12 30 55.8, 15.0 S, 172.4 W, h about 33 km, Tonga Islands.
- 1 eiZ P or PKP 17 28 26.4.
- 1 iZ Pg 18 43 49.8, iZ Sg 18 43 52.0, D= 22 km, Litija region aftershock. Very weak, not felt.
- 1 eiZ+ Pn 20 37 49.8, iZ! 20 38 (00), iZ 20 38 16.0, eiZ! Sn 20 38 10.2, eiZ!! 20 38 18.9, USCGS: H= 20 36 09.5, 39.0 N, 15.0 E, h about 285 km, Mediterranean Sea. M=4.4 (CGS). D= about 780 km.
- 1 eiZ PKP₁ 21 28 02.4, iZ PKP₂ 21 28 11.5, USCGS: H= 21 08 17.3, 22.2 S, 169.6 E, h² about 35 km, Loyalty Islands region. M=4.4 (CGS).
- 1 eZ-PKP₁ 21 33 35.7, iZ 21 33 38.7, iZ! 21 33 46.3, eiZ PKP₂ 21 33 53.8, eiZ 21 34 02.4, USCGS: H= 21 13 52.7, 15.2 S, 173.5 W, h about 33 km, Samoa Islands region, Felt: Apia. M=5.5 (CGS). D= about 16.550 km.
- 2 iZ Pg 13 34 46.6, iZ Sg 13 34 49.0, D= 25 km, Litija region aftershock.
- 2 eiZ PP 21 23 00.5, weak traces, USCGS: H= 21 04 24.2, 58.5 S, 15.6 W, Sandwich Islands region, h about 50 km, M=6-6 1/4 (Pal).
- 3 iZ Pg 07 19 21.5, eiZ Sg 07 19 23.6, D= 22 km, Litija region aftershock.

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- 3 eiZ P 07 48 29.8, eiZ! 07 48 37.1, eiZ 07 49 (00),
USCGS: H= 07 35 54.3, 34.2 N, 138.7 E, h abbut 43 km,
Honshu, Japan. M=5.3 (CGS).
- 3 eZ P 11 44 21, eiZ 11 45 26.3, eZ PP 11 45 42, USCGS:
H= 11 31 48.7, 5.3 N, 72.9 W, Colombia, h about 21
km, Small damage in central Colobia. M=5 (Pal), 5.0 (CGS)
D= about 9.300 km.
- 3 iZ Pg 20 28 41.0, iZ Sg 20 28 44.8, D= 29 km.
- 4 iZ Pg 02 16 55.0, iZ! Sg 02 16 57.2, iZ 02 17 05.0,
D= 22 km, Litija aftershock. Felt in Litija 3-4⁰ MCS.
- 4 Z 12 11-13, weak traces.
- 4 eiZ PKP 12 14 08.0, traces. USCGS: H= 11 54 09.1,
30.5 S, 177.8 W, h about 33 km, Kermadec Islands.
M=5.1 (CGS).
- 4 eiZ 21 22 55.8, eiZ PP 21 23 27.7, eZ 21 24 10,
USCGS: H= 21 04 42.3, 1.2 S, 127.3 E, h about 31 km,
Halmahera region, M=5.2 (CGS).
- 4 iZ+ Pn 22 13 32.1, iZ 22 13 38.7, iZ 22 14 02.1,
iZ Sn 22 15 13.1, iZ 22 15 31.3, Z! 22 16 (00),
eiZ 22 16 18.7, eNE 22 16 32, iZ! 22 16 39.8, BCIS:
H= 22 11 33, 38.9 N, 20.5 E, h about 50 km, Ionian
Sea, west of Gulf of Arta. USCGS: H= 22 11 31.8,
39.0 N, 20.6 E, h about 33 km, Greece. M=4.7 (CGS);
D= about 920 km.
- 4 iZ Pg 22 22 57.8, iZ! Sg 22 22 (00), iZ 22 23 06.5,
D= 23 km, Litija region aftershock.
- 5 eiZ PKP 14 27 26.9, eiZ! 14 27 48.3, USCGS: H= 14
07 38.1, 12.7 S, 176.7 W, h about 33 km, Tonga Islands
region, M= 4.8 (CGS).
- 5 iZ Pg 14 57 42.1, iZ! Sg 14 57 44.5, D= 23 km, Litija
aftershock, weak, not felt.
- 5 eiZ P or PKP 17 23 09.3, weak traces.
- 5 eZ PKP 23 12 40, weak trace, USCGS: H= 22 54 28.7,
3.0 S, 119.5 E, h about 75 km, Celebes.
- 6 iZ Pg 02 09 05.7, iZ Sg 02 09 08.0, D= 23 km, Litija
region aftershock, very weak.
- 6 eiZ- P 08 33 11.0, eiZ 08 33 31.6, USCGS: H= 08 21
12.2, 6.7 N, 94.7 E, h about 33 km, Nicobar Islands
region, M=5.5 (CGS).
- 6 iZ Pn 11 57 20.4, eiZ 11 57 35.6, eiZ (Sg) 11 58 30.6,
eiZ! 11 58 52.9, (D= about 4.1⁰).
- 6 eZ Pn 12 16 19.0, eiZ! Sn 12 16 54.1, eiZ Sn 12 17
06.3, (D= about 315 km) weak.
- 6 eZ PP 12 22 16.4, weak trace, USCGS: H= 12 04 14.3,
37.8 S, 77.9 E, h about 33 km, 1500 km NE of Kerguelen
Islands. M=5.3 (CGS).
- 6 eiZ PKP 18 01 55.0, eiZ! 18 02 02.8, USCGS: H= 17 42

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- 6 (cont.) 47.0, 14.3 S, 167.3 E, h about 160 km, New
Hebrides Islands. Felt: Santo. M=4.7 SD 0.4 (CGS).
- 7 iZ Pg 07 40 05.4, iZ Sg 07 40 07.6, D= 22 km, Litija
region aftershock, weak, not felt.
- 7 eiZ 15 59 42.5, weak traces.
- 7 eZ P 16 02 45, eiZ 16 02 52.9, eZ PP 16 06 13.5,
USCGS: H= 15 49 57.4, 19.0 N, 121.8 E, h about 33 km,
Off north coast of Luzon, Philippine Islands. M=4.7
(CGS). D= about 9.700 km.
- 7 eiZ- PKP 22 51 37.9, iZ- 22 51 41.7, eiZ 22 51 53.5,
USCGS: H= 22 31 54.8, 15.2 S, 173.1 W, h about 33 km,
Samoa Islands region. M=4.6 (CGS).
- 7 (e)Z PKP₁ 22 57 13, eiZ 22 57 15.6, eiZ (PKP₂) 22 57
37.3, USCGS: H= 22 37 30.0, 15.3 S, 173.2 W, h about
33 km, Samoa Islands region, M=5.0 SD 0.2 (CGS).
- 8 eiZ+ PKP₁ 01 21 37.5, eiZ PKP₂ 01 21 57.5, USCGS: H=
01 01 51.9, 15.1 S, 173.0 W, h about 33 km, Samoa
Islands region. M=4.6 (CGS).
- 8 eiZ PKP 02 20 19.7, iZ 02 20 29.4, USCGS: H= 02 00
32.2, 23.2 S, 171.3 E, h about 47 km, Loyalty Islands
region. M=4.3 (CGS).
- 8 eiZ P 04 34 21.6, eiZ 04 34 33.5, USCGS: H= 04 22
53.0, 22.7 S, 13.7 W, h about 33 km, South Atlantic
Ocean. M=4.9 (CGS).
- 8 eiZ Pg 14 28 01.8, iZ Sg 14 28 16.5, D= 115 km, weak.
- 8 eiZ 18 47 24.5, weak trace.
- 9 eiZ+ P 20 47 50.6, eiZ 20 47 56.1, Z 20 48 (00),
USCGS: H= 20 37 51.6, 10.7 N, 41.9 W, h about 33 km,
Mid Atlantic Ocean, M=5.0 (CGS).
- 10 eiZ+ PKP 06 58 46.3, iZ! 06 58 51.6, iZ! 06 58 56.7,
iZ 06 59 06.7, eZ 07 02 26, eiZ PP 07 02 30.2,
USCGS: H= 06 39 04.0, 55.3 S, 146.1 E, h about 18 km,
80⁰ km W of Macquarie Islands. M=6 1/4-6 1/2 (Pas),
6 1/4-6 1/2 (Pal). D=16.600 km.
- 10 eZ PKP 10 58 59, eiZ 10 59 17.7, USCGS: H= 10 46 58.1,
50.9 N, 160.2 E, h about 33 km, Off coast of Kamchatka,
M=5.3 (CGS).
- 10 iZ Pg 13 15 53.0, iZ! Sg 13 15 54.8, iZ 13 15 56.2,
D= 12 km, Valley of Sava, E from Ljubljana.
- 10 iZ Pg 15 10 19.2, iZ Sg 15 10 21.6, D= 24 km, Litija
region aftershock.
- 11 eiZ PKP 00 17 39.0, iZ 00 17 55.6, USCGS: H= 23 58
44.3, 4.5 S, 152.8 E, h about 69 km, New Britain, felt:
Kambubu. M=5.2 (CGS).
- 11 eiZ+ P 03 33 28.6, iZ! 03 33 33.8, USCGS: H= 03 25 40.7,
37.1 N, 70.3 E, h about 38 km, Hindu Kush, M=4.3 (CGS).
- 11 iZ! Pg 05 25 54.6, iZ!! Sg 05 25 57.3, iZ 05 26 04.9,
D=28 km, Litija region.

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- 11 (ei)Z 19 29 32, eiZ 19 29 49.8, weak trace.
- 12 eZ PKP 04 27 45, eZ 04 28 25.4, USCGS: H= 04 08 11.7, 15.8 S, 174.2 W, h about 150 km, Samoa Islands region, M=4.4 (CGS).
- 12 iZ Pn 17 42 47.4, eiZ 17 43 06.6, eiZ (SgSg) 17 44 36.3, weak.
- 12 iZ!NE Pg 19 24 40.2, iZ!! Sg 19 24 42.8, iNE Sg 19 24 43, D= 20 km, Sg: Tz=0.3 s, Az=14, BCIS: H= 19 24 37, 46°05' N, 14° 45' E (Ljubljana), Jevnica-Ribče near Litija, Yugoslavia, east from Ljubljana. Aftershock from earthquake on May 19, 1963, 10^h 00^m. Ljubljana felt 4° MCS, Io=5° MCS, macroseismic ray R=30 km.
- 12 iZ Pg 21 26 36.3, iZ! Sg 21 26 38.5, iZ 21 26 46.0, D= 20 km, aftershock Litija region, BCIS: H=21 26 33.
- 13 eiZ 00 06 19.4, eiZ 00 06 55.5, traces.
- 13 eiZ Pn 08 39 28.5, eiZ! 08 39 31.1, eiZ 08 41 13.9, eZ (SgSgSg) 08 41 54, USCGS: H= 08 37 39.7, 38.7 N, 14.8 E, h about 33 km, Off northern coast of Sicily, M=4.4 (CGS). D= about 820 km.
- 13 iZ Pn 11 37 35.2, iZ Sg 11 38 09.5, D= 2.2 °, weak.
- 13 eiZ-PKP 17 45 38.4, eiZ 17 45 50.5, USCGS: H= 17 26 41.1, 4.6 N, 153.2 E, h about 54 km, New Britain. Felt: Raboul. M=5.0 (CGS).
- 13 eiZ P 22 35 03.3, eiZ 22 35 10.7, USCGS: H= 22 23 34.3, 11.7 S, 65.0 E, h about 33 km, Indian Ocean, southwest of Chagos Archipelago.
- 16 iZ Pn 11 21 27.1, iZ Sg 11 22 04.3, D= 2.36°.
- 17 iZ Pg 02 13 30.7, iZ Sg 02 13 32.7, D= 20 km, Litija region aftershock, weak, not felt.
- 17 iZ Pg 16 12 30.8, iZ Sg 16 12 33.3, D= 25 km, Litija region aftershock.
- 17 eZ P 18 43 35, eiZ 18 43 41.9, USCGS: H= 18 32 14.5, 60.4 N, 140.8 W, h about 33 km, Southwestern Yukon. M=5 1/4-5 1/2 (Pal), 5.1 SD 0.4 (CGS).
- 17 eZ PKP 18 50 50, eiZ 18 51 03.1, obscured by microseisms, USCGS: H= 18 30 54.1, 65.8 S, 179.5 W, h about 33 km, Scott Islands region. M=5.6 (CGS).
- 17 eiZ+ PKP 20 28 34.0, eiZ 20 28 47.7, USCGS: H= 20 08 37.0, 20.4 S, 174.4 W, h about 33 km, Tonga Islands. M=4.9 SD 0.3 (CGS).
- 17 eiZ+ P 23 15 07.1, iZ 23 15 10.4, eiZ pP 23 15 23.2, iZ! 23 15 29.2, iZ 23 15 54.7, USCGS: H= 23 02 06.6, 4.1 S, 102.2 E, h about 73 km, Near south coast of Sumatra, M=6.1 (CGS), D=about 10.100 km.
- 18 eiZ+ P 04 15 06.1, iZ 04 15 09.6, USCGS: H= 04 02 31.0, 29.0 N, 129.9 E, h about 33 km, Ryukyu Islands. M=5.5 (CGS).
- 18 eiZ P or PKP 15 40 30.2.

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- 18 iZ!NE Pg 20 51 45.2, iZ!NE Sg 20 51 47.6, D= 24 km, Litija region aftershock. Litija: felt 4° MCS, Ljubljana felt 3° MCS.
- 19 iZNE Pg 01 20 18.9, iZ!NE Sg 01 20 21.3, iZ 01 20 35.8, D= 24 km, Litija region aftershock. Litija: 3° MCS.
- 19 eiZ+ P 09 22 49.6, eiZ 09 23 05.8, eiZ PP 09 27 02.7, USCGS: H= 09 09 04.0, 4.7 N, 126.5 E, h about 83 km, Taland Islands region. M=5 1/4-5 1/2 (Pal), 6.2 (CGS), D=101.3°.
- 19 eiZ+ P 10 57 54.2, iZ- 10 57 55.8, eiZ 10 58 08.2, USCGS: H= 10 47 24.7, 25.0 N, 92.1 E, h about 51 km, Assam, India. M=5.7 (CGS).
- 19 eiZ PKP 12 18 09.0, weak trace. USCGS: H= 11 58 55.0, 9.3 S, 158.8 E, h about 33 km, Solomon Islands. Felt: Honiara. M=5.5 (CGS).
- 19 eiZ PKP 18 40 37.6, weak trace. USCGS: H= 18 22 09.6, 3.5 S, 153.4 E, h about 279 km, New Ireland region, Felt: Rabaul. M=5.1 SD 0.2 (CGS).
- 19 eZ P 23 14 49, USCGS: H= 23 01 51.5, 31.5 N, 140.3 E, h about 38 km, South of Hondo, Japan. M=5 1/2 (Berk), 5 1/4 (Pal), 5.0 (CGS).
- 20 iZ+ Pg 10 38 22.3, iZ! Sg 10 38 24.5, D=22 km, Litija aftershock, weak, Litija felt: 2-3° MCS.
- 20 eZ P 19 51 37.7, eiZ 19 51 53.8, BCIS: H= 19 47 45, 36 1/4 N, 4 1/4 W, Western Mediterranean, south from Malaga. USCGS: H= 19 47 41.3, 35.8 N, 3.6 W, h about 54 km, Western Mediterranean. M=4.6 SD 0.2 (CGS).
- 20 eZ PKP₁ 23 06 13.3, eiZ PKP₂ 23 06 53.6, USCGS: H= 22 46 18.1, 27.9 S, 176.6 W, h about 41 km, Kermadec Islands. M=5.2 SD 0.1 (CGS).
- 21 iZ 00 20 30.6, weak trace.
- 21 eiZ P or PKP 00 55 26.4, iZ 00 55 37.6.
- 21 iZ Pg 05 59 22.2, iZ Sg 05 59 24.7, D= 26 km, Litija region aftershock.
- 21 eiZ+ Pn 06 03 37.8, iZ! Pg 06 03 50.0, iZ Sn 06 04 19.7, iZ! Sg 06 04 34.6, iZ! 06 04 45.0, D= 370 km, BCIS: H= 06 02 50, 43.3 N, 17.0 E, Yugoslavia, Dinaric Alps around Makarska. Probably aftershock of the seisms Jan. 7 & 11, 1962.
- 21 eiZ P or PKP 11 40 05.4, eiZ 11 40 12.8, weak traces.
- 21 Z P 15 37 (00) in minute interruption, eiZ! 15 37 00.8, eiZ 15 37 35.5, USCGS: H= 15 26 31.0, 25.2 N, 92.2 E, h about 56 km, Eastern India. M=5.6 (CGS).
- 21 eiZ 18 14 26.7, iZ 18 14 33.6, weak traces.
- 22 iZ+ Pg 08 51 22.5, iZ Sg 08 51 25.0, D= 24 km, Litija region aftershock.
- 22 iZ Pg 16 43 03.0, iZ Sg 16 43 04.9, D= 14 km, E from Ljubljana. weak, not felt.

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- 23 eiZ PKP 04 09 28.1, eiZ 04 10 12.8, USCGS: H= 03 49 33.9, 29.6 S, 177.9 W, h about 55 km, Kermadec Islands region. M=5.0 SD 0.3 (CGS).
- 23 iZ! Pg 09 34 04.0, iNE Pg 09 34 05.7, iZ! 09 34 06.4, iZ!! Sg 09 34 16.5, eiNE Sg 09 34 16.7, F 09 42 -; D= 95 km, Ljubljana: felt 2° MCS. Novo mesto: felt 4° MCS. BCIS: H= 09 33 52, 45.4 N, 15.4 E, Yugoslavia. BCIS: H= 09 33 53.2, 45.6 N, 14.9 E, h about 33 km, Yugoslavia, felt: Karlovac. Zagreb: felt in Karlovac. Trieste: felt 3° MCS.
- 24 iZ Pg 03 53 37.9, iZ Sg 03 53 40.1, D= 22 km, Litija region aftershock.
- 24 eiZ- P 04 38 11.5, iZ 04 38 21.6, iZ PcP 04 38 23.9, eE 04 38 28.6, eiZ 04 38 31.1, iZ 04 38 37.0, eZ S 04 47 43, USCGS: H= 04 26 37.9, 59.5 N, 151.7 W, h about 52 km, Cook Inlet. M=6 3/4 (Pas), 5.7 (CGS). Felt. D=8.150 km.
- 24 eZ PKP 13 37 38, traces, obscured by microseisms. USCGS: H= 13 18 08.2, 25.5 S, 175.6 W, h about 238 km, Tonga Islands region. M=4.6 SG 0.3 (CGS).
- 24 eiZ PKP 15 20 40.3, iZ! 15 20 43.3, USCGS: H= 15 01 44.2, 15.5 S, 177.5 W, h about 412 km, Fiji Islands region. M=5.0 SD 0.2 (CGS).
- 24 eiZ P 16 29 33.0, eiZ 16 30 11.1, USCGS: H= 16 17 15.4, 52.3 N, 171.2 W, h about 33 km, Fox Islands region, Aleutian Islands. M=5.4 SD 0.3 (CGS).
- 25 eiZ PKP 02 48 25.7, USCGS: H= 02 29 36.5, 18.9 S, 177.5 W, h about 566 km, Fiji Islands region, M=4.1 SD 0.2 (CGS).
- 25 eiZ P 14 44 37.4, iZ 14 44 51.3, USCGS: H= 14 32 14.3, 8.4 S, 106.5 E, h about 78 km, Near south coast of Java. M=5.4 (CGS).
- 25 eZ PKP 16 23 39, eiZ 16 23 47.5, USCGS: H= 16 04 19.3, 20.4 S, 176.1 W, h about 250 km, Tonga Islands region. M=4.3 SD 0.2 (CGS).
- 25 eZ 17 44 (54) very weak trace. BCIS: H= 17 42 02.5, 50° 40' N, 7° 25' E, Germany, Bonn region.
- 26 eiZ Pn 05 50 43.2, eiZ PgPg 05 51 25.2, eiZ Sn 05 52 14.0, eiZ 05 52 49.1, iZ (SgSg) 05 53 (00) eNE 05 53 46.5, BCIS: H= 05 48 53, 42.0 N, 23.7 E, Southern Bulgaria. Sofia: southern Bulgaria. Felt 5-6° MCS at Razlogue.
- 26 iZ Pg 09 01 40.8, iZ 09 01 43.7, iZ Sg 09 01 51.7, D= 0.78°.
- 26 eZ P 10 31 03, eiZ 10 31 23.0, BCIS: H= 10 27 10, 36.0 N, 4 1/2 W, Western Mediterranean. Off coast of Malaga.
- 26 iZ Pg 14 11 39.9, iZ Sg 14 11 42.1, D=23 km, Litija region aftershock.

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- 26 eiZ- P 14 17 41.4, iZ 14 17 48.4, eiZ 14 18 16.0, USCGS: H=14 09 13.0, 36.4 N, 76.9 E, h about 33 km, Sinkiang Province, China. M=5.3 (CGS).
- 26 iZ Pn 15 21 07.9, eiZ 15 22 (00). in minute interruption.
- 26 eiZ P 17 55 39.5, eiZ 17 55 47.4, USCGS: H= 17 42 40.6, 7.1 N, 82.3 W, h about 20 km, Near south coast of Panama. Felt: Boquete. M=6 1/4-6 1/2 (Pas), 5 1/2-5 3/4 (Pal), 6.0 SD 0.3 (CGS).
- 26 Z 20 21-23 traces, weak.
- 27 eZ P 07 19 24, USCGS: H= 07 08 01.7, 60.5 N, 140.7 W, h about 29 km, Yukon Territory. M=4.6 SD 0.3 (CGS).
- 27 eiZ- Pn 10 29 46.0, iZ! Pg 10 29 52.3, iZ 10 29 56.4, iZ 10 30 10.0, iZ! Sn 10 30 16.3, iZ! Sg 10 30 26.6, iZ!! 10 30 32.0, D= 270 km, BCIS: H= 10 29 14, 44 1/4 N, 12 1/4 E, Northern Italy, south of Ravenna.
- 27 eiZ Pn 11 07 40.6, eZ 11 08 11, eZ 11 10 02.
- 27 iZ! Sg 15 42 02.6, D= about 20 km, Litija aftershock.
- 27 iZ+ P 15 44 17.1, iZ 15 44 34.0, USCGS: H= 15 32 53.1, 14.4 N, 93.7 E, h about 33 km, Andaman Islands region. M=5.2 (CGS).
- 28 iZ+ Pg 00 28 33.7, iZE Sg 00 28 26.1, D= 18 km, Litija region aftershock.
- 28 eZ P 02 41 33, USCGS: H= 02 28 51.6, 27.5 S, 66.1 E, h about 33 km, Indian Ocean. M=6.0 (CGS).
- 28 eiZ P 14 00 16.1, eiZ 14 00 23.4, USCGS: H= 13 47 47.7, 1.3 N, 97.4 E, h about 50 km, Near coast of Sumatra. M=5.0 (CGS).
- 28 eiZ+ P 22 07 52.6, iZ! 22 07 55.5, iZ!NE 22 08 (00), eZ 22 10 25.5, eZ PP 22 11 08, USCGS: H= 21 55 38.8, 46.5 N, 153.2 E, h about 33 km, Kurile Islands region, M=6 3/4 (Pas), 6.1 SD 0.3 (CGS). D= 9.000 km.
- 29 eiZ P 00 06 09.6, iZ 00 06 14.4, USCGS: H= 23 53 56.1, 46.4 N, 153.5 E, h about 33 km, Kurile Islands region, M=5.3 SD 0.3 (CGS).
- 29 iZ 07 21 01.8, weak trace.
- 29 iZ Pn 18 45 40.7, iZ Pg 18 45 48.3, eiZ Sn 18 46 11.3, iZ Sg 18 46 25.7, iZ! 18 46 32.0, D= 290 km.
- 30 eZ PKP 02 24 15, eiZ 02 24 17.4, USCGS: H= 02 04 36.9, 21.9 S, 170.8 E, h about 73 km, Loyalty Islands region. M=4.7 (CGS).
- 30 iZ+P 06 58 20.5, iZ 06 58 26.5, USCGS: H= 06 45 36.8, 2.5 S, 102.4 E, h about 160 km, Sumatra, M=5.5 (CGS).
- 30 iZ P 07 47 09.5, iZ 07 47 20.1, USCGS: H= 07 41 08.2, 33.3 N, 49.1 E, h about 40 km, Western Iran. Extensive property damage. M=5.0 (CGS).
- 30 iZ Pn 18 23 15.7, eiZ 18 24 29.1, eiZ 18 25 26.9.

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30 eiZ P 22 17 05.6, eiZ 22 17 27.0, USCGS: H= 2204 52.8,
46.5 N, 153.3 E, h about 33 km, Kurile Islands.
M= 4.9 SD 0.3 (CGS).

Ljubljana, February 20, 1964

V. Ribarič