

MONTHLY TELESEISMIC BULLETIN of SZGRF-ERLANGEN - August 1999

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H. Aichele, K. Klinge, R. Hohl

date	station	time	distance	phase	backazimut	comp	per[s]	ampl[nm]	magn
.
SZGRF or NEIC-QED			LOCATION						

1999-08-01 D 1.3 149km

GRA1	07:08:23.2	e Pg		Z					M12.9
GRA1	07:08:38.1	e Sn		N					
GRA1	07:08:40.2	e Sg		N					

SZGRF: OT 07:07:57.2 49N 10E dep 10km

Backnang, NE of Stuttgart

1999-08-01

GRA1	07:56:09.3	e PKP		Z					
GRA1	07:56:19.5	e		Z					

1999-08-01 D 61.4

GRA1	08:34:50.3	e P		Z	T1.5	A49			mb5.1
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SZGRF: OT 08:24:38.3 27N 88E dep 33km

NEPAL

1999-08-01 D159.6

GRA1	08:59:03.7	e PKPdf		Z					
GRA1	08:59:42.8	e PKPab		Z					
GRA1	09:03:21.4	e PP		Z					
GRA1	09:13:38.2	e (PSKS)		N					
GRA1	09:23:20.3	e SS		E					
GRA1	10:08:45.3	e L		E	T23.7	A5036			MS6.3

NEIC: OT 08:39:08.0 30S 178W dep 33km mb5.7

KERMADEC ISLANDS, NEW ZEALAND

1999-08-01

GRA1	10:22:49.6	e (P)		Z					
GRA1	10:22:55.6	e		Z					
GRA1	10:23:02.3	e		Z					

1999-08-01

GRA1 11:40:04.3 e PKP Z

1999-08-01 D 79.0

GRA1 12:59:51.8 i P c Z T1.1 A43 mb5.4

GRA1 13:00:06.2 e pP Z

GRA1 13:00:15.0 e sP Z

GRA1 13:10:04.6 e S N

GRA1 13:15:02.9 e SS N

GRA1 13:34:31.6 e L Z T22.0 A2189 MS5.4

SZGRF: OT 12:47:52.5 51N 176W dep 55km

ANDREANOF ISLANDS, ALEUTIAN IS.

1999-08-01 D 81.6

GRA1 16:18:44.3 e P Z T1.8 A113 mb5.7

GRA1 16:28:59.6 e S E

GRA1 16:56:51.7 e L Z T18.1 A3223 MS5.7

SZGRF: OT 16:06:31.2 38N 116W dep 33km

SOUTHERN NEVADA

1999-08-01 D 77.6

GRA1 20:22:50.3 e P Z T1.7 A89 mb5.6

SZGRF: OT 20:10:59.4 53N 174W dep 33km

ANDREANOF ISLANDS, ALEUTIAN IS.

1999-08-02 D 82.6 AZ322

GRA1 06:17:35.2 e P Z T0.7 A14 mb5.3

GRA1 06:55:30.8 e L Z T19.1 A382 MS4.8

SZGRF: OT 06:05:16.5 37N 118W dep 33km

CALIFORNIA-NEVADA BORDER REGION

1999-08-02 D 37.7 AZ 7

GRA1 06:48:30.1 e P Z T1.7 A77 mb5.2

NEIC: OT 06:40:58.5 86N 84E dep 10km mb4.9

NORTH OF SEVERNAYA ZEMLYA

1999-08-02

GRA3 10:06:07.7 e PKPdf Z

1999-08-02 D 83.6 AZ 33

GRA1 15:43:55.1 e P Z T0.7 A13 mb5.3

NEIC: OT 15:31:47.8 40N 142E dep 64km mb4.8

NEAR EAST COAST OF HONSHU, JAPAN

1999-08-03 D 4.9 541km

GRA1 02:23:00.7 e Sg N M13.5

SZGRF: OT 02:20:24.2 50N 19E dep 1km

POLAND

1999-08-03

GRA1 08:32:09.8 e PKP Z

1999-08-03 D 43.4 AZ 84

GRA1 12:10:32.3 e P Z

GRA1 12:31:23.6 e L Z T18.5 A212 MS4.1

SZGRF: OT 12:02:33.4 37N 70E dep 33km

HINDU KUSH REGION

1999-08-03 D 21.6

GRA1 14:00:49.5 e P Z T1.6 A125 mb5.2

GRA1 14:09:15.8 e L Z T22.0 A5196 MS4.9

SZGRF: OT 13:56:03.0 71N 2E dep 33km

NORWEGIAN SEA

1999-08-03 D 90.8 AZ267

GRA1 16:12:02.3 e P Z T1.5 A106 mb5.9

GRA1 16:12:26.1 e pP Z

GRA1 16:22:33.4 e SKSac E

GRA1 16:29:13.8 e SS E

SZGRF: OT 15:59:02.2 2S 77W dep 89km

PERU-ECUADOR BORDER REGION

1999-08-04 D 57.0 AZ 70

GRA1 00:18:23.7 e P Z T1.1 A29 mb5.2

GRA1 00:26:04.0 e S E

GRA1 00:45:35.8 e L Z T19.1 A581 MS4.7

NEIC: OT 00:09:00.7 38N 87E dep 33km mb5.0

SOUTHERN XINJIANG, CHINA

1999-08-04 D 80.4

GRA1 04:22:55.2 e P Z T0.8 A16 mb5.0

SZGRF: OT 04:10:48.4 43N 149E dep 33km

KURIL ISLANDS REGION

1999-08-04 D 57.4

GRA1 06:52:03.0 e P Z T0.9 A14 mb5.0

SZGRF: OT 06:42:15.7 6S 27E dep 33km

ZAIRE REPUBLIC

1999-08-04 D 3.6 404km

GRA1 22:35:27.2 e Pn Z M13.3

GRA1 22:36:25.1 e Sg N

SZGRF: OT 22:34:30.0 51N 16E dep 1km

POLAND

1999-08-05

GRA1 04:53:30.7 e PKP Z
GRA1 04:53:33.9 e Z

1999-08-05 D 89.5 AZ286

GRA1 05:44:27.4 e P Z T1.2 A22 mb5.3
NEIC: OT 05:31:48.0 12N 87W dep 10km mb4.9
NICARAGUA

1999-08-05 D 87.9 AZ287

GRA1 07:23:57.4 e P Z T1.4 A21 mb5.3
NEIC: OT 07:11:16.4 12N 87W dep 10km mb4.9
NICARAGUA

1999-08-05

GRA1 21:25:06.7 e PKP Z

1999-08-05 D 3.1 342km

GRA1 14:18:13.0 e Sg E M12.8
SZGRF: OT 14:16:34.6 50N 7E dep 10km
Pruem/Eifel

1999-08-06 D 90.9 AZ288

GRA1 19:05:57.7 e P Z

1999-08-06 D 76.5

GRA1 00:44:25.9 e P Z T1.3 A75 mb5.7
GRA1 01:22:33.5 e L Z T19.7 A7538 MS6.0
SZGRF: OT 00:32:41.3 50N 158E dep 33km
KURIL ISLANDS

1999-08-07 D 76.1

GRA1 03:12:31.2 e P Z T0.9 A13 mb5.1
SZGRF: OT 03:00:48.6 51N 161E dep 33km
OFF EAST COAST OF KAMCHATKA

1999-08-07

GRA1 06:37:16.3 e PKP Z
GRA1 07:45:09.6 e L Z T21.8 A688

1999-08-07 D 1.8 200km

GRA1 03:44:39.6 e Sg Z

1999-08-08

GRA1 02:57:36.7 e P Z T1.2 A14

 1999-08-08 D 81.3
 GRA1 04:57:37.9 e P Z T1.9 A71 mb5.4
 GRA1 04:57:43.0 e pP Z
 GRA1 04:57:47.3 e sP Z
 SZGRF: OT 04:45:26.2 43N 129W dep 20km
 OFF COAST OF OREGON

 1999-08-08 D 3.6 401km
 GRA1 06:29:52.6 e Pn Z M13.3
 GRA1 06:30:49.9 e Sg E
 SZGRF: OT 06:28:55.7 51N 16E dep 1km
 POLAND

 1999-08-08 D 39.0
 GRA1 13:53:15.0 e P Z T1.4 A60 mb5.0
 GRA1 13:53:23.0 e pP Z
 SZGRF: OT 13:45:52.7 85N 80E dep 30km
 NORTH OF SEVERNAYA ZEMLYA

 1999-08-08
 GRA1 15:35:38.7 e PKP Z
 GRA1 15:36:29.7 e Z

 1999-08-09 D 76.8
 GRA1 23:10:46.8 e P Z T1.3 A69 mb5.6
 GRA1 23:20:53.0 e S N
 GRA1 23:26:09.9 e SS N
 GRA1 23:44:24.1 e L Z T21.4 A480 MS4.8
 SZGRF: OT 22:59:00.3 53N 178E dep 33km
 RAT ISLANDS, ALEUTIAN ISLANDS

 1999-08-10 D149.1
 GRA1 12:41:02.0 e PKPdf Z
 GRA1 13:51:19.1 e L Z T20.6 A577 MS5.4
 NEIC: OT 12:21:19.1 22S 170E dep 33km mb5.0
 LOYALTY ISLANDS REGION

 1999-08-10 D 86.8 AZ281
 GRA1 15:08:23.0 e P Z T0.8 A17 mb5.2
 GRA1 15:19:10.4 e S E
 GRA1 15:25:03.1 e SS E
 GRA1 15:41:26.5 e L Z T21.6 A1741 MS5.4
 SZGRF: OT 14:55:42.2 10N 85W dep 33km
 OFF COAST OF COSTA RICA

1999-08-10 D 78.2
 GRA1 18:50:17.0 e P Z T0.9 A42 mb5.6
 GRA1 19:30:16.9 e L Z T18.5 A912 MS5.1
 SZGRF: OT 18:38:23.3 45N 148E dep 33km
 KURIL ISLANDS

 1999-08-11 D 22.2 AZ126
 GRA1 04:32:24.9 e P Z T2.5 A74 mb4.7
 GRA1 04:32:54.2 e Z
 GRA1 04:36:49.1 e S N
 GRA1 04:42:45.8 e L Z T18.5 A4487 MS4.9
 SZGRF: OT 04:27:31.3 34N 33E dep 33km
 CYPRUS

 1999-08-11 D 22.6
 GRA1 20:05:05.1 e (P) Z
 SZGRF: OT 20:00:06.8 35N 35E dep 33km
 CYPRUS

 1999-08-11 D 3.7 408km
 GRA1 23:39:10.0 e Pn Z M13.6
 GRA1 23:40:09.0 e Sg N
 SZGRF: OT 23:38:12.3 52N 16E dep 1km
 POLAND

 1999-08-11 D 15.0
 GRA1 04:45:12.0 e (P) Z

 1999-08-12 D147.9
 GRA1 00:44:50.8 e PKP Z
 GRA1 01:53:25.0 e L Z T21.3 A390 MS5.2
 NEIC: OT 00:25:06.8 19S 176W dep 33km mb4.7
 FIJI ISLANDS REGION

 1999-08-12 D105.1
 GRA1 05:59:15.3 e (Pdfff) Z
 GRA1 06:03:29.0 e PP Z
 GRA1 06:09:47.8 e SKS E
 GRA1 06:55:32.4 e L Z T19.3 A2972 MS5.8
 NEIC: OT 05:44:58.1 2S 122E dep 28km mb5.9
 SULAWESI, INDONESIA

 1999-08-12
 GRA1 10:34:57.3 e (PKP) Z

 1999-08-12 D 78.7
 GRA1 21:02:27.6 e P Z T0.7 A17 mb5.2

GRA1 21:42:09.7 e L Z T19.7 A82 MS4.1
SZGRF: OT 20:50:30.0 45N 148E dep 33km
KURIL ISLANDS

1999-08-12

GRA1 21:33:26.1 e PKP Z

1999-08-13 D 79.2

GRA1 00:42:28.2 e P Z T1.1 A44 mb5.4
GRA1 00:52:42.5 e (S) N
GRA1 00:57:52.5 e (SS) N
GRA1 01:22:42.1 e L Z T20.3 A121 MS4.2
SZGRF: OT 00:30:28.3 52N 170W dep 33km
FOX ISLANDS, ALEUTIAN ISLANDS

1999-08-13 D 79.0 AZ 1

GRA1 03:12:29.2 e P Z T1.3 A107 mb5.7
GRA1 03:12:40.8 e Z
GRA1 03:22:47.1 e S N
GRA1 03:27:55.9 e SS N
GRA1 03:52:44.0 e L Z T20.3 A520 MS4.9
SZGRF: OT 03:00:30.1 52N 171W dep 33km
FOX ISLANDS, ALEUTIAN ISLANDS

1999-08-13 D 78.9

GRA1 08:08:40.7 e P Z T1.2 A58 mb5.5
GRA1 08:11:48.3 e PP Z
GRA1 08:19:00.2 e S N
GRA1 08:24:07.2 e SS N
GRA1 08:56:19.2 e L Z T18.0 A1271 MS5.3
SZGRF: OT 07:56:42.4 52N 170W dep 33km
FOX ISLANDS, ALEUTIAN ISLANDS

1999-08-13

GRA1 10:37:52.1 e (PKP) Z

1999-08-13 D 78.1

GRA1 13:18:00.2 e P Z T1.4 A140 mb5.9
GRA1 13:57:34.1 e L Z T18.1 A2016 MS5.5
SZGRF: OT 13:06:06.2 45N 148E dep 33km
KURIL ISLANDS

1999-08-13 D 22.7

GRA1 15:36:28.3 e (P) Z T1.8 A59 mb4.8
GRA1 15:45:19.5 e L Z T21.0 A371 MS3.8
SZGRF: OT 15:31:29.7 35N 35E dep 33km
JORDAN - SYRIA REGION

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1999-08-13      D 71.0
  GRA1 18:47:25.9 e (P)      Z
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1999-08-13      D 80.8  AZ 27
  GRA1 20:36:15.2 e P        Z  T1.3  A16      mb4.9
SZGRF: OT 20:24:06.3 44N    153E  dep 33km
  KURIL ISLANDS REGION
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1999-08-14      D 96.8
  GRA1 00:30:12.6 e P        Z  T1.2  A130      mb6.4
  GRA1 00:40:39.2 e SKSac    E
  GRA1 00:41:26.0 e S        N
  GRA1 00:42:44.7 e SP        E
  GRA1 00:48:04.9 e SS        E
  GRA1 01:23:14.6 e L        Z  T20.8 A1690    MS5.5
SZGRF: OT 00:16:44.5 6S     105E  dep 33km
  SUNDA STRAIT
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1999-08-14
  GRA1 01:21:11.5 e          Z
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1999-08-14
  GRA1 16:28:54.4 e PKP      Z
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1999-08-14      D 79.2  AZ358
  GRA1 20:21:00.0 e P        Z          mb5.1
  BEAM 20:21:00.0          T1.0  A20
SZGRF: OT 20:09:01.2 52N    166W  dep 33km
  ALEUTIAN ISLANDS REGION
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1999-08-14      D 3.6  404km
  GRA1 21:28:04.2 e Pn       Z          M13.0
  GRA1 21:28:11.6 e Pg       Z
  GRA1 21:29:02.7 e Sg       N
SZGRF: OT 21:27:07.0 51N    16E   dep 1km
  POLAND
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1999-08-15      D 91.0  AZ302
  GRA1 04:24:35.6 e P        Z          mb5.1
  BEAM 04:24:35.6          T1.2  A12
  GRA1 05:05:26.2 e L        Z  T20.8 A80    MS4.1
SZGRF: OT 04:11:35.4 19N    104W  dep 33km
  NEAR COAST OF JALISCO, MEXICO
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1999-08-15      D 75.0  AZ 79

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GRA1 16:30:11.0 e P Z T1.4 A31 mb5.1
GRA1 16:30:31.5 e Z
GRA1 17:06:12.5 e L Z T21.3 A747 MS5.0
SZGRF: OT 16:18:33.2 18N 99E dep 33km
SOUTHEAST ASIA

1999-08-15

GRA1 20:09:10.3 e (PKP) Z

1999-08-15 D124.9

GRA1 20:09:10.9 e (PKP) Z
GRA1 20:09:19.8 e Z
GRA1 21:07:40.3 e L Z T20.5 A913 MS5.4

1999-08-15 D 95.5

GRA1 00:55:20.0 e (X) Z
GRA1 01:41:46.0 e L Z T19.8 A597 MS5.1
NEIC: OT 00:41:48.1 12N 124E dep 33km mb5.0
LEYTE, PHILIPPINE ISLANDS

1999-08-16

GRA1 00:06:16.0 e (PKP) Z
BEAM 00:06:18.7 e Z

1999-08-16 D147.6

GRA1 02:38:52.1 e PKP Z
GRA1 02:39:01.5 e Z
GRA1 03:45:00.9 e L Z T20.6 A194 MS4.9
NEIC: OT 02:19:06.6 17S 173W dep 33km mb4.9
TONGA ISLANDS REGION

1999-08-16

GRA1 06:29:11.1 e PKP Z

1999-08-16 D 90.5 AZ 63

GRA1 14:51:42.1 e P Z T0.4 A7 mb5.3
SZGRF: OT 14:38:43.9 17N 123E dep 33km
LUZON, PHILIPPINE ISLANDS

1999-08-16 D 50.8 AZ 98

GRA1 18:24:57.0 e P Z T0.9 A11 mb4.8
GRA1 18:50:20.3 e L Z T18.0 A134 MS4.0
SZGRF: OT 18:16:00.2 25N 69E dep 33km
INDIA-PAKISTAN BORDER REGION

1999-08-16 D 79.4 AZ 26
GRA1 18:53:10.4 e P Z T1.0 A10 mb4.8
NEIC: OT 18:41:11.3 44N 148E dep 67km mb4.5
KURIL ISLANDS

1999-08-16 D 3.6 402km
GRA1 01:20:24.9 e Pn Z M13.8
GRA1 01:21:22.6 e Sg N
SZGRF: OT 01:19:28.2 52N 16E dep 1km
POLAND

1999-08-17 D 13.6
GRC3 00:05:13.7 e Pn Z
GRA1 00:05:21.3 e Pn Z T2.3 A12151
GRA1 00:13:03.8 e L Z T18.7 A1446143 MS7.1
SZGRF: OT 00:02:03.3 42N 28E dep 33km
BLACK SEA

1999-08-17 D 15.6
GRA1 01:11:42.0 e Pn Z
SZGRF: OT 01:08:05.0 42N 31E dep 33km
BLACK SEA

1999-08-17 D 14.9
GRA1 01:36:52.0 e (Pn) Z T2.4 A102
SZGRF: OT 01:33:23.8 42N 30E dep 33km
BLACK SEA

1999-08-17 D 15.9
GRA1 01:57:28.8 e Pn Z
SZGRF: OT 01:53:47.4 36N 22E dep 33km
MEDITERRANEAN SEA

1999-08-17 D 15.2
GRA1 02:27:04.7 e (Pn) Z
SZGRF: OT 02:23:33.4 42N 30E dep 33km
BLACK SEA

1999-08-17 D 15.2
GRA1 02:38:49.5 e Pn Z T2.2 A147
SZGRF: OT 02:35:18.2 43N 31E dep 33km
BLACK SEA

1999-08-17 D 15.9
GRA1 02:46:50.9 e Pn Z T2.3 A223
SZGRF: OT 02:43:09.9 42N 31E dep 33km
BLACK SEA

1999-08-17 D 15.0

GRA1 02:54:36.5 e Pn Z T2.2 A377
SZGRF: OT 02:51:07.1 43N 30E dep 33km
BLACK SEA

1999-08-17 D 15.6
GRA1 03:17:52.9 e Pn Z T2.8 A1005
SZGRF: OT 03:14:15.6 42N 31E dep 33km
BLACK SEA

1999-08-17 D 14.4
GRA1 04:24:11.2 e Pn Z T1.6 A41
SZGRF: OT 04:20:50.3 43N 30E dep 33km
BLACK SEA

1999-08-17 D 83.7 AZ 50
GRA1 04:36:56.2 e P Z T0.9 A12 mb5.1
SZGRF: OT 04:24:31.6 30N 130E dep 33km
KYUSHU, JAPAN

1999-08-17 D 21.0
GRA1 04:49:26.1 e P Z mb4.5
BEAM 04:49:26.1 T1.1 A32
NEIC: OT 04:44:34.5 68N 35E dep 10km mb4.4
BALTICS-BELARUS-NW RUSSIA REG.

1999-08-17 D151.9
GRA1 04:50:56.6 e PKP Z

1999-08-17 D 14.8
GRA1 09:06:11.2 e (Pn) Z T1.1 A29
SZGRF: OT 09:02:44.2 43N 30E dep 33km
BLACK SEA

1999-08-17 D 72.1 AZ 67
GRA1 10:52:25.8 e (P) Z T2.3 A114 mb5.6
SZGRF: OT 10:41:05.5 28N 106E dep 33km
EASTERN CHINA

1999-08-17 D 22.4
GRA1 15:11:18.1 e P Z T0.9 A41 mb4.9
GRA1 15:21:24.5 e L Z T18.0 A449 MS3.9
SZGRF: OT 15:06:21.3 34N 33E dep 33km
CYPRUS

1999-08-17
GRA1 18:57:27.1 e PKP Z

1999-08-17

GRA1 20:59:54.5 e PKP Z

1999-08-18

D 78.4

GRA1 00:28:03.8 e P Z T0.9 A19 mb5.2

GRA1 01:05:29.9 e L Z T20.8 A82 MS4.0

SZGRF: OT 00:16:07.6 42N 140E dep 33km

HOKKAIDO, JAPAN REGION

1999-08-18

D 84.1

GRA1 01:18:49.8 e P Z T1.5 A43 mb5.5

SZGRF: OT 01:06:23.4 38N 125W dep 33km

OFF COAST OF NORTHERN CALIFORNIA

1999-08-18

D163.9

GRA1 01:37:28.3 e PKP Z

GRA1 01:41:17.0 e PP Z

NEIC: OT 01:16:48.5 37S 177E dep150km mb5.6

OFF E. COAST OF N. ISLAND, N.Z.

1999-08-19

BEAM 01:04:50.4 e PKP Z

1999-08-19

D 28.4 AZ100

GRB3 04:38:56.7 e P Z T1.4 A28 mb4.9

BEAM 04:39:01.4 e P Z T1.5 A14 mb4.6

GRA1 04:39:01.5 e (P) Z

NEIC: OT 04:33:15.8 38N 47E dep 33km mb4.7

ARMENIA-AZERBAIJAN-IRAN BORD REG

1999-08-19

D 14.4

GRA1 13:08:09.1 e Pn Z T1.5 A26

BEAM 13:08:09.4 e Pn Z T1.4 A26

SZGRF: OT 13:04:48.2 43N 30E dep 33km

BLACK SEA

1999-08-19

D 15.8

GRA1 14:19:40.7 e (PnI) Z T0.5 A13

GRA1 14:28:12.2 e L Z T18.0 A249 MS3.4

SZGRF: OT 14:16:01.2 42N 31E dep 33km

TURKEY

1999-08-19

BEAM 15:21:23.5 e Pn Z T1.3 A26

GRA1 15:27:48.1 e L Z T19.9 A746 MS3.9

NEIC: OT 15:17:45.1 41N 29E dep 10km mb5.0

TURKEY

 1999-08-19 D 44.7
 GRA1 20:54:47.5 e P Z T0.8 A6 mb4.6
 GRA1 20:54:55.7 e Z
 NEIC: OT 20:46:59.9 39N 69E dep 33km mb4.4
 TAJIKISTAN

1999-08-19 D 77.9
 GRA1 22:46:17.7 e P Z T0.8 A5 mb4.7
 GRA1 22:46:32.0 e Z
 SZGRF: OT 22:34:24.5 46N 148E dep 33km
 KURIL ISLANDS

1999-08-20 D 82.1 AZ126
 GRA1 03:55:53.9 e (P) Z
 BEAM 03:55:54.1 e P Z
 SZGRF: OT 03:43:35.2 16S 67E dep 33km
 MID-INDIAN RISE

1999-08-20 D 15.0
 GRA1 09:32:39.9 e P Z T2.5 A102
 BEAM 09:32:40.8 e Pn Z
 GRA1 09:39:00.3 e L Z T18.3 A269 MS3.4
 NEIC: OT 09:28:54.6 41N 29E dep 10km mb4.6
 TURKEY

1999-08-20 D 84.3
 GRA1 10:15:03.1 e P Z T1.5 A196 mb6.1
 GRA1 10:49:50.1 e L Z T19.7 A170468 MS7.4
 SZGRF: OT 10:02:34.8 10N 82W dep 33km
 NORTH OF PANAMA

1999-08-20
 GRA1 11:34:32.3 e PKP Z

1999-08-20 D 80.8 AZ325
 GRA1 14:02:03.0 e P Z T0.7 A12 mb5.0
 NEIC: OT 13:50:24.5 45N 113W dep 5km mb5.3
 EASTERN IDAHO

1999-08-20
 GRA1 20:38:54.5 e PKP Z

1999-08-20 D 84.7 AZ 42
 GRA1 20:45:32.3 e P Z T1.3 A158 mb6.1
 GRA1 20:55:44.9 e S T
 GRA1 21:26:21.7 e L Z T19.9 A960 MS5.2

SZGRF: OT 20:33:02.6 33N 138E dep 33km
NEAR S. COAST OF HONSHU, JAPAN

1999-08-20 AZ282
BEAM 22:53:43.1 e P Z
GRA1 22:53:43.6 e P Z T1.3 A14 mb4.9
GRA1 23:32:30.1 e L Z T19.4 A245 MS4.5
NEIC: OT 22:41:00.7 9N 84W dep 33km mb4.7
COSTA RICA

1999-08-20 D 3.7 413km
GRA1 03:11:44.3 e Pn Z M13.9
GRA1 03:11:56.2 e Pg Z
SZGRF: OT 03:10:46.0 51N 16E dep 1km
POLAND

1999-08-21 AZ 85
BEAM 00:17:03.4 e P Z
GRA1 00:17:03.8 e P Z T1.0 A19 mb4.8
SZGRF: OT 00:09:11.0 37N 68E dep 33km
HINDU KUSH REGION

1999-08-21
GRA1 01:23:46.9 e (PKP) Z
BEAM 01:23:47.0 e PKP Z

1999-08-21
BEAM 02:32:53.6 e (PKP) Z
GRA1 02:32:53.7 e (PKP) Z

1999-08-21
GRA1 03:17:58.8 e PKP Z
BEAM 03:17:58.9 e PKP Z

1999-08-21
GRA1 06:45:34.1 e (PKP) Z
BEAM 06:45:35.0 e (PKP) Z

1999-08-21 AZ281
BEAM 11:02:33.1 e P Z
GRA1 11:02:33.2 e P Z T1.3 A93 mb5.8
GRA1 11:13:04.4 e SKS R
GRA1 11:19:07.7 e SS E
GRA1 11:34:53.2 e L Z T21.6 A2247 MS5.5
SZGRF: OT 10:49:49.2 9N 86W dep 33km

OFF COAST OF COSTA RICA

1999-08-21

BEAM	19:56:38.8	e	PKP	Z			
GRA1	19:56:40.0	e	(PKP)	Z			

1999-08-21 D109.4

GRA1	22:10:18.0	e	PP	Z			
GRA1	22:55:55.2	e	L	Z	T19.7	A770	MS5.3

NEIC: OT 21:51:11.2 58S 13W dep 10km mb5.4
SOUTHWESTERN ATLANTIC OCEAN

1999-08-22

BEAM	03:27:43.6	e	PKP	Z			
GRA1	03:27:44.1	e	PKP	Z			
GRA1	03:27:52.2	e		Z			

1999-08-22 AZ 25

BEAM	05:44:53.2	e	P	Z			
GRA1	05:44:53.8	e	P	Z	T0.7	A4	mb4.6

SZGRF: OT 05:32:44.9 45N 155E dep 33km
KURIL ISLANDS REGION

1999-08-22 D117.2

GRA1	09:54:22.9	e	PKP	Z			
GRA1	10:05:26.2	e	SP	Z			
GRA1	10:43:23.9	e	L	Z	T20.8	A9215	MS6.4

NEIC: OT 09:35:40.0 40S 75W dep 33km mb6.2
OFF COAST OF SOUTHERN CHILE

1999-08-22

BEAM	11:18:03.8	e	P	Z			
GRA1	11:18:04.4	e	P	Z	T1.1	A75	mb5.1

SZGRF: OT 11:13:03.2 38N 38E dep 33km
TURKEY

1999-08-22 D 24.2

GRA1	12:21:22.4	e	(P)	Z			
BEAM	12:21:24.7	e	(P)	Z			

SZGRF: OT 12:16:09.1 34N 36E dep 33km
JORDAN - SYRIA REGION

1999-08-22 D141.2

GRA1	13:00:11.7	e	PKP	Z			
BEAM	13:00:12.3	e	PKP	Z			
GRA1	13:03:12.7	e	PP	Z			
GRA1	14:14:17.6	e	L	Z	T19.7	A5174	MS6.3

NEIC: OT 12:40:45.9 16S 168E dep 33km mb6.3
VANUATU ISLANDS

1999-08-22 D 86.0 AZ280
GRA1 13:46:51.3 e P Z T0.8 A8 mb4.9
GRA1 13:47:00.4 e pP Z
GRA1 13:47:04.3 e sP Z
SZGRF: OT 13:34:14.2 10N 84W dep 33km
COSTA RICA

1999-08-22
BEAM 14:34:54.8 e Pn Z
GRA1 14:35:01.2 e Pn Z T0.9 A10
SZGRF: OT 14:31:15.6 42N 32E dep 33km
TURKEY

1999-08-22 AZ 26
BEAM 18:44:10.4 e P Z
GRA1 18:44:10.4 e P Z T0.9 A6 mb4.5
SZGRF: OT 18:32:07.0 45N 154E dep 33km
KURIL ISLANDS REGION

1999-08-22 D105.2
GRA1 21:18:37.0 e L Z T19.0 A588 MS5.1
NEIC: OT 20:08:09.9 13N 145E dep 62km mb5.0
MARIANA ISLANDS

1999-08-23
GRA1 00:04:39.9 e PKP Z
BEAM 00:04:40.0 e PKP Z

1999-08-23 D 3.7 410km
GRA1 01:21:22.8 e Pn Z M14.0
GRA1 01:21:35.0 e Pg Z
GRA1 01:22:21.8 e Sg N
SZGRF: OT 01:20:25.1 51N 16E dep 1km
POLAND

1999-08-23 D 81.2 AZ 33
GRA1 06:23:33.0 e P Z T0.9 A62 mb5.6
BEAM 06:23:33.4 e P Z
GRA1 07:01:09.3 e L Z T20.8 A641 MS5.0
SZGRF: OT 06:11:22.4 41N 145E dep 33km
OFF EAST COAST OF HONSHU, JAPAN

1999-08-23 D150.0
GRA1 07:05:41.2 e PKP Z
BEAM 07:05:41.4 e PKP Z

GRA1 07:05:49.7 e Z
 BEAM 07:05:50.4 e Z
 NEIC: OT 06:46:58.9 20S 179W dep627km mb4.4
 FIJI ISLANDS REGION

 1999-08-23 AZ 34
 BEAM 10:20:29.2 e P Z
 GRA1 10:20:29.2 e P Z T0.7 A19 mb5.3
 GRA1 10:50:41.1 e P N
 GRA1 10:58:14.2 e L Z T21.2 A277 MS4.5
 SZGRF: OT 10:08:39.8 44N 142E dep 33km
 HOKKAIDO, JAPAN REGION

 1999-08-23 D 89.7
 GRA1 11:10:21.4 e P Z T1.6 A31 mb5.3
 BEAM 11:10:21.5 e P Z
 SZGRF: OT 10:58:19.2 28N 139E dep509km
 BONIN ISLANDS REGION

 1999-08-23 D 3.7 408km
 GRA1 10:31:08.5 e Sg N M13.5
 SZGRF: OT 10:29:12.6 51N 16E dep 1km
 POLAND

 1999-08-24
 BEAM 02:31:20.9 e PKP Z
 GRA1 02:31:21.1 e PKP Z
 GRA1 02:31:29.4 e Z
 BEAM 02:31:29.7 e Z
 NEIC: OT 02:11:43.7 22S 176W dep149km mb4.9
 FIJI ISLANDS REGION

 1999-08-24
 BEAM 02:54:21.0 e PKP Z
 GRA1 02:54:21.0 e PKP Z

 1999-08-24 AZ126
 BEAM 03:22:33.4 e P Z
 GRA1 03:22:33.4 e P Z T0.9 A6 mb4.8

 1999-08-24 D 15.7
 GRA4 17:37:34.3 e Pn Z T1.8 A70
 BEAM 17:37:35.6 e Pn Z
 GRA1 17:37:36.8 e Pn Z
 GRA1 17:45:09.6 e L Z T18.2 A957 MS4.0
 SZGRF: OT 17:33:55.7 42N 31E dep 33km
 BLACK SEA

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1999-08-24      D 15.0
  GRA1  20:05:32.9 e P      Z  T1.5  A24
  BEAM  20:05:33.1 e P      Z
  BEAM  20:05:38.5 e        Z
  GRA1  20:05:38.9 e        Z
  GRA1  20:11:43.3 e L      Z  T20.4  A315      MS3.4
SZGRF: OT 20:01:12.8 37N    22E    dep 33km
SOUTHERN GREECE
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1999-08-24      D 86.8  AZ319
  GRA1  13:16:49.4 e P      Z  T1.2  A13      mb5.0
  BEAM  13:16:49.4 e P      Z
  BEAM  13:16:52.9 e PcP    Z
  GRA1  13:16:53.0 e PcP    Z
NEIC:  OT 13:04:08.3 32N    114W    dep 10km  mb4.8
GULF OF CALIFORNIA
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1999-08-25      D 77.7  AZ 23
  GRA1  04:52:57.2 e P      Z  T0.7  A14      mb5.2
SZGRF: OT 04:41:05.5 48N    156E    dep 33km
KURIL ISLANDS REGION
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1999-08-25      D145.1
  GRA1  07:25:29.3 e PKP    Z
  GRA1  07:25:33.9 e        Z
NEIC:  OT 07:06:22.2 19S    170E    dep265km  mb5.4
VANUATU ISLANDS
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1999-08-25
  BEAM  16:11:54.9 e        Z
  GRA1  16:11:55.3 e        Z
  GRA1  16:12:06.6 e PKP    Z
  BEAM  16:12:06.7 e PKP    Z
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1999-08-25      D 23.7
  GRA1  23:20:16.5 e (P)    Z
  BEAM  23:20:17.2 e P      Z  T1.2  A7      mb4.1
  GRA1  23:28:47.6 e L      Z  T21.3  A56      MS3.0
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1999-08-26
  BEAM  01:38:10.4 e P      Z
  GRA1  01:38:11.5 e P      Z  T2.0  A63      mb5.6
  GRA1  01:42:12.1 e PP     Z
  GRA1  02:24:25.1 e L      Z  T21.3  A1832     MS5.5
SZGRF: OT 01:24:58.5 12N    122E    dep 33km
LUZON, PHILIPPINE ISLANDS
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1999-08-26 D 23.5
GRA1 01:53:43.5 e P Z T1.1 A9 mb4.2
BEAM 01:53:45.1 e P Z

1999-08-26 D 22.1
GRA1 05:08:10.8 e P Z T1.3 A153 mb5.3
GRA1 05:16:44.7 e L Z T21.7 A1187 MS4.3
SZGRF: OT 05:03:18.5 71N W dep 33km
JAN MAYEN ISLAND REGION

1999-08-26 D155.2
GRA1 07:59:46.8 e PP Z
GRA1 08:52:18.0 e L Z T19.7 A7264 MS6.5
SZGRF: OT 07:35:55.3 31S 169E dep 33km
NORTHWEST OF NEW ZEALAND

1999-08-26
BEAM 09:11:32.9 e PKP Z
GRA1 09:11:33.0 e PKP Z

1999-08-26 AZ 84
BEAM 10:07:43.5 e P Z
GRA1 10:07:44.4 e P Z T1.7 A75 mb5.2
BEAM 10:07:56.6 e Z
GRA1 10:31:03.9 e L Z T18.6 A355 MS4.3
SZGRF: OT 09:59:42.1 37N 70E dep 33km
HINDU KUSH REGION

1999-08-26
BEAM 17:24:18.4 e (PKP) Z
GRA1 17:24:18.4 e (PKP) Z

1999-08-26
BEAM 18:04:41.4 e PKP Z
GRA1 18:04:41.5 e PKP Z
BEAM 18:04:48.6 e Z
GRA1 18:04:49.4 e Z

1999-08-26
BEAM 18:51:48.7 e P Z
GRA1 18:51:51.4 e (P) Z T1.8 A31 mb4.5
SZGRF: OT 18:46:54.5 71N 6W dep 33km
JAN MAYEN ISLAND REGION

1999-08-26 AZ 53
 BEAM 20:27:50.8 e P Z
 GRA1 20:27:51.0 e P Z T1.0 A12 mb5.0
 BEAM 20:28:01.5 e Z
 GRA1 21:10:27.9 e L Z T18.2 A253 MS4.7
 NEIC: OT 20:15:19.0 27N 129E dep113km mb4.6
 RYUKYU ISLANDS

1999-08-26 AZ 63
 BEAM 21:50:59.4 e P Z
 GRA1 21:50:59.7 e P Z T2.8 A140 mb6.0
 GRA1 22:01:23.9 e SKKSac R
 GRA1 22:35:32.3 e L Z T19.4 A1772 MS5.5
 SZGRF: OT 21:38:21.6 20N 120E dep 33km
 PHILIPPINE ISLANDS REGION

1999-08-26 D 24.1
 GRA1 23:13:25.3 e (P) Z T1.8 A21 mb4.4
 BEAM 23:13:30.8 e P Z T1.2 A5 mb3.9
 SZGRF: OT 23:08:12.4 73N 3W dep 33km
 JAN MAYEN ISLAND REGION

1999-08-27 D 76.5
 GRA1 00:56:45.8 e P Z T1.3 A9 mb4.7
 GRA1 00:56:50.1 e Z
 SZGRF: OT 00:45:00.8 54N 167W dep 33km
 FOX ISLANDS, ALEUTIAN ISLANDS

1999-08-27 D 66.4
 GRA1 17:20:14.4 e P Z T1.2 A9 mb4.9
 SZGRF: OT 17:09:30.4 63N 149W dep 33km
 CENTRAL ALASKA

1999-08-27
 BEAM 23:38:21.9 e PKP Z
 BEAM 23:38:27.3 e Z
 GRA1 23:38:28.5 e PKP Z
 NEIC: OT 23:19:15.1 20S 178W dep385km mb4.4
 FIJI ISLANDS REGION

1999-08-28 D 95.9
 GRA1 03:39:49.5 e P Z T1.1 A17 mb5.5
 GRA1 04:25:10.3 e L Z T21.6 A208 MS4.6
 SZGRF: OT 03:26:24.6 29S 73E dep 33km
 MID-INDIAN RISE

1999-08-28 AZ269
 BEAM 04:38:42.8 e P Z
 GRA1 04:38:43.0 e P Z T1.5 A37 mb5.4

GRA1 05:01:43.4 e L Z T19.5 A287 MS4.5
SZGRF: OT 04:27:47.9 16N 63W dep 33km
LEEWARD ISLANDS

1999-08-28 D 58.7 AZ241
GRA1 05:36:22.4 e P Z T1.1 A9 mb4.7
BEAM 05:36:22.5 e P Z
GRA1 05:57:07.3 e L Z T19.3 A105 MS4.0
SZGRF: OT 05:26:27.5 7N 38W dep 33km
CENTRAL MID-ATLANTIC RIDGE

1999-08-28
GRA1 07:42:56.6 e PKP Z
BEAM 07:42:56.6 e PKP Z

1999-08-28 D 2.4 263km
GRA1 11:49:55.9 e Pn Z M13.3
GRA1 11:50:03.4 e Pg Z
GRA1 11:50:34.0 e Sg E
SZGRF: OT 11:49:19.4 47N 11E dep 10km
Imst/A, Western Mieminger Mountains

1999-08-28 D 87.3
GRA1 12:52:46.1 e P Z T1.6 A354 mb6.3
GRA1 13:27:46.8 e L Z T22.0 A1916 MS5.5
SZGRF: OT 12:40:03.0 S 75W dep 33km
COLOMBIA

1999-08-28
BEAM 15:43:59.8 e Z
GRA1 15:44:07.4 e PKP Z
BEAM 15:44:07.8 e PKP Z

1999-08-28
BEAM 18:26:59.5 e (P) Z
GRA1 18:26:59.8 e (P) Z
NEIC: OT 18:19:00.1 36N 69E dep 33km mb4.8
HINDU KUSH REGION, AFGHANISTAN

1999-08-28 D 22.5
GRA1 20:21:08.5 e P Z T1.2 A66 mb4.9
GRA1 20:30:19.6 e L Z T19.3 A356 MS3.8
SZGRF: OT 20:16:11.6 33N 32E dep 33km
EASTERN MEDITERRANEAN SEA

1999-08-29 D 62.1
GRA1 00:56:57.9 e P Z T1.6 A164 mb6.0

GRA1 00:57:04.2 e Z
 GRA1 01:26:04.9 e L Z T21.5 A995 MS4.9
 SZGRF: OT 00:46:39.2 5N 63E dep 33km
 CARLSBERG RIDGE

 1999-08-29 AZ 91
 BEAM 03:06:40.7 e P Z
 GRA1 03:06:40.9 e P Z T1.3 A12 mb5.2
 GRA1 03:06:47.0 e Z

 1999-08-29 AZ 89
 BEAM 03:56:58.1 e P Z
 GRA1 03:56:58.4 e P Z T0.8 A8 mb4.9
 GRA1 03:57:02.3 e PcP Z
 GRA1 04:37:12.4 e L Z T21.0 A183 MS4.4
 SZGRF: OT 03:44:40.3 6N 97E dep 33km
 NICOBAR ISLANDS REGION

 1999-08-29 D 59.0
 GRA1 04:59:16.5 e (P) Z T2.2 A29 mb4.9
 BEAM 04:59:16.5 e P Z
 BEAM 04:59:23.8 e Z
 GRA1 04:59:24.1 e Z T2.2 A29
 SZGRF: OT 04:49:19.7 14N 47W dep 33km
 NORTH ATLANTIC RIDGE

 1999-08-29
 BEAM 08:41:28.5 e PKP Z
 GRA1 08:41:28.9 e PKP Z

 1999-08-29 AZ 25
 BEAM 21:24:50.0 e P Z
 GRA1 21:24:50.2 e P Z T0.8 A24 mb5.2
 GRA1 22:00:40.6 e L Z T20.1 A52 MS3.9
 SZGRF: OT 21:12:43.2 45N 155E dep 33km
 KURIL ISLANDS REGION

 1999-08-29 D147.7
 GRA1 23:46:37.4 e PKP Z
 BEAM 23:46:37.4 e PKP Z
 BEAM 23:46:41.0 e Z
 GRA1 23:46:41.3 e Z

 1999-08-30 D 24.0
 GRA1 08:53:21.8 e P Z T0.8 A9 mb4.4
 BEAM 08:53:22.2 e P Z
 GRA1 09:02:51.4 e L Z T18.3 A289 MS3.8

SZGRF: OT 08:48:10.5 68N 19W dep 33km
ICELAND REGION

1999-08-30

BEAM 09:13:46.8 e P Z
SZGRF: OT 09:08:35.8 68N 20W dep 33km
ICELAND REGION

1999-08-30 D 23.1

GRA1 09:23:15.1 e (P) Z T0.9 A13 mb4.4
NEIC: OT 09:18:01.2 68N 18W dep 10km mb4.3
ICELAND REGION

1999-08-30 D 22.5

GRA1 09:34:49.4 e P Z T1.7 A50 mb4.8
GRA1 09:44:37.6 e L Z T18.1 A447 MS3.9
SZGRF: OT 09:29:53.0 68N 16W dep 33km
ICELAND REGION

1999-08-30 D 22.5

GRA1 09:18:24.4 e P Z T1.8 A107 mb5.0
SZGRF: OT 09:13:28.3 68N 16W dep 33km
ICELAND REGION

1999-08-30 D 22.3

GRA1 09:13:59.1 e P Z T1.1 A57 mb4.9
SZGRF: OT 09:08:51.1 68N 15W dep 33km
ICELAND REGION

1999-08-30 D 22.9

GRA1 10:05:02.7 e P Z T1.5 A19 mb4.4
GRA1 10:14:57.5 e L Z T18.1 A113 MS3.4
SZGRF: OT 10:00:01.7 67N 18W dep 33km
ICELAND REGION

1999-08-30

GRA1 20:16:41.4 e PKP Z
BEAM 20:16:41.5 e PKP Z

1999-08-31

BEAM 08:14:32.9 e Pn Z
GRA1 08:14:36.7 e Pn Z
BEAM 08:14:39.3 e Z
GRA1 08:14:39.4 e Z
GRA1 08:20:40.7 e L Z T21.4 A1214 MS4.0
SZGRF: OT 08:11:08.1 43N 30E dep 33km
BLACK SEA

1999-08-31 D 53.0 AZ 84
GRA3 12:09:14.1 e P Z T0.9 A18 mb5.0
GRA1 12:09:14.5 e (P) Z T1.9 A40 mb5.0
BEAM 12:09:14.8 e P Z T0.8 A16 mb5.0
GRA1 12:41:53.6 e L Z T20.1 A118 MS3.9
NEIC: OT 12:01:00.2 36N 71E dep 33km mb4.9
AFGHANISTAN-TAJIKISTAN BORD REG.

1999-08-31 D 15.0
GRA1 22:32:17.3 e (P) Z
BEAM 22:32:20.4 e P Z
