

MONTHLY TELESEISMIC BULLETIN of SZGRF-ERLANGEN - July 1998

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

1998-07-01

GRA1 01:27:08.6 e (PKPdf) Z

1998-07-01 D150.5

GRA1 01:59:11.6 e (PKPdf) Z

GRA1 01:59:15.4 e PKPbc Z

GRA1 01:59:22.7 e PKPab Z

GRA1 02:00:38.8 e (pPKPbc)Z

NEIC: OT 01:40:21.3 20.1S 177.9W dep500km mb4.5

FIJI ISLANDS REGION

1998-07-01 D 51.2 AZ 75

GRA1 02:51:58.6 i P c Z mb4.5

ALIGN 02:51:58.6 T0.9 A6

GRA1 02:52:08.9 e pP Z

GRA1 03:12:46.3 e L Z T18.2 A241 MS4.3

SZGRF: OT 02:42:59.9 37.7N 82.7E dep 38km

SOUTHERN SINKIANG PROV., CHINA

1998-07-01

GRA1 10:00:11.5 e Pn Z

GRA1 10:01:30.1 e Sg Z

1998-07-01 D 92.1

GRA1 15:10:24.6 e P c Z mb5.1

BEAM 15:10:24.6 T1.4 A14

GRA1 15:48:24.8 e L Z T20.4 A109 MS4.3

NEIC: OT 14:57:15.7 1.2S 81.0W dep 33km mb4.8

NEAR COAST OF ECUADOR

1998-07-01

GRA1 19:36:38.1 e (PKPab) Z

1998-07-01

GRA1 20:55:18.0 e (PKPab) Z

1998-07-01 D 46.7 AZ 82

GRA1 22:58:57.4 e P Z mb4.6

BEAM 22:58:57.4 T2.0 A11

1998-07-02 D 3.6 405km

GRA1 03:05:01.2 e Pn Z M13.9

GRA1 03:05:59.8 e Sg E

SZGRF: OT 03:04:03.7 51.5N 16.2E dep 1km

POLAND

1998-07-02 D 82.9

GRA1 03:52:17.3 i P d Z mb4.7

ALIGN 03:52:17.3 T1.0 A5

GRA1 04:28:37.2 e L Z T20.8 A231 MS4.5

NEIC: OT 03:39:50.7 36.9N 117.5W dep 5km mb4.7

CALIFORNIA-NEVADA BORDER REGION

1998-07-02 D 78.3 AZ 1

GRA1 04:59:08.7 i P c Z mb5.7

ALIGN 04:59:08.7 T1.3 A75

GRA1 04:59:20.6 e pP Z

GRA1 04:59:26.7 e (sP) Z

GRA1 05:38:16.9 e L Z T19.8 A228 MS4.5

SZGRF: OT 04:47:15.1 52.4N 170.7W dep 43km

FOX ISLANDS, ALEUTIAN ISLANDS

1998-07-02 D 73.6 AZ 95

GRA1 05:21:52.4 i P c Z mb4.8

BEAM 05:21:52.4 T1.1 A10

GRA1 05:22:02.6 e pP Z

NEIC: OT 05:09:09.0 1.5N 90.4E dep 10km mb4.6

NORTH INDIAN OCEAN

1998-07-02 D 24.6 AZ285

GRA1 05:55:37.8 i P c Z

ALIGN 05:55:37.8 T1.4 A37

GRA1 05:55:41.6 e pP Z

GRA1 06:04:36.5 e L Z T21.8 A1475 MS4.4

SZGRF: OT 05:50:18.5 49.6N 27.1W dep 15km

NORTH ATLANTIC RIDGE

1998-07-02 D 23.4 AZ360

GRA1 18:23:38.8 e P c Z mb4.6
BEAM 18:23:38.8 T1.7 A32
GRA1 18:23:44.4 e pP Z
GRA1 18:31:54.6 e L Z T18.8 A36 MS2.9
SZGRF: OT 18:18:31.8 73.0N 10.7E dep 23km
NORWEGIAN SEA

1998-07-02 D 23.5 AZ360
GRA1 19:30:50.6 e P Z mb4.5
ALIGN 19:30:50.6 T2.0 A33
GRA1 19:30:59.6 e pP Z
GRA1 19:39:09.1 e L Z T20.0 A79 MS3.2
SZGRF: OT 19:25:44.8 73.1N 10.8E dep 37km
NORWEGIAN SEA

1998-07-03
GRA1 00:35:05.6 e PKPdf d Z
NEIC: OT 00:36:24.5 1.5S 116.2E dep 33km mb4.7
BORNEO

1998-07-03
GRA1 01:20:25.2 e PKPdf Z

1998-07-03 D 81.2 AZ 27
GRA1 02:43:27.3 i P c Z mb5.4
ALIGN 02:43:27.3 T1.1 A47
GRA1 02:43:37.6 e pP Z
GRA1 02:43:41.2 e sP Z
GRA1 03:24:43.6 e L Z T19.7 A84 MS4.1
SZGRF: OT 02:31:16.8 43.6N 152.6E dep 35km
KURIL ISLANDS REGION

1998-07-03 D 23.6 AZ359
GRA1 06:32:18.7 e P Z mb4.3
BEAM 06:32:18.7 T1.7 A17
GRA1 06:32:24.2 e (pP) Z
SZGRF: OT 06:27:09.8 73.2N 9.7E dep 30km
GREENLAND SEA

1998-07-03 D 90.7
GRA1 06:52:13.1 e P Z mb5.7
ALIGN 06:52:13.1 T1.3 A46

1998-07-03 D 86.6 AZ 64
GRA1 12:48:17.4 e P Z mb4.7
BEAM 12:48:17.4 T1.2 A7
NEIC: OT 12:34:35.8 7.2N 126.7E dep 70km mb4.9

MINDANAO, PHILIPPINE ISLANDS

 1998-07-03 D 3.7 409km
 GRA1 19:15:19.5 e Pn Z M13.8
 GRA1 19:16:17.9 e Sg E
 SZGRF: OT 19:14:21.0 51.5N 16.3E dep 1km
 POLAND

1998-07-03
 GRA1 22:42:20.9 e PKPdf Z

1998-07-04
 GRA1 01:42:20.5 e PKPdf Z
 GRA1 01:42:51.4 e pPKPdf Z
 NEIC: OT 01:23:43.0 4.3S 143.6E dep111km mb5.5
 NEW GUINEA, PAPUA NEW GUINEA

1998-07-04 D 21.5
 GRA1 02:20:35.0 i P c Z
 GRA1 02:24:42.1 e (S) Z
 GRA1 02:29:27.1 e L Z T21.8 A1834 MS4.4

1998-07-04 D153.4
 GRA1 04:41:20.5 e PKPdf Z
 GRA1 04:41:27.5 i PKPbc d Z
 GRA1 04:41:38.9 e PKPab Z
 GRA1 04:43:50.1 e pPKPbc Z
 NEIC: OT 04:22:40.7 22.2S 179.6W dep600km mb4.6
 SOUTH OF FIJI ISLANDS

1998-07-04
 GRA1 16:05:09.1 e PKPdf Z

1998-07-05 D 77.8 AZ 1
 GRA1 01:17:59.5 e P Z
 ALIGN 01:17:59.5 T0.9 A14
 GRA1 01:18:30.5 e pP Z
 GRA1 01:18:39.0 e sP Z
 GRA1 01:58:52.8 e L Z T21.8 A82 MS4.0
 SZGRF: OT 01:06:17.3 52.9N 171.0W dep116km
 FOX ISLANDS, ALEUTIAN ISLANDS

1998-07-05 D153.3
 GRA1 02:12:44.7 e PKPdf Z
 GRA1 03:28:31.7 e L Z T19.1 A265 MS5.1

1998-07-05

GRA1 23:24:55.2 e PKPdf Z

GRA1 23:25:07.2 e (pPKPdf)Z

1998-07-06 no data analysing-----
1998-07-07 D 18.0 AZ153

GRA1 02:02:35.4 e P Z mb3.4

BEAM 02:02:35.4 T0.7 A2

GRA1 02:02:40.7 e pP Z

GRA1 02:02:42.7 e sP Z

GRA1 02:06:00.7 e (S) Z

GRA1 02:09:09.2 e L Z T15.4 A250 MS3.6

NEIC: OT 01:59:47.0 39.1N 18.0E dep 10km mb4.5

SOUTHERN ITALY

1998-07-07 D148.9

GRA1 03:49:03.6 e PKPdf Z

GRA1 03:49:05.8 i PKPbc d Z

GRA1 03:49:10.5 e PKPab Z

NEIC: OT 03:30:14.8 18.6S 178.1W dep500km mb4.1

FIJI ISLANDS REGION

1998-07-07

GRA1 05:14:17.3 e PKPdf Z

GRA1 05:14:42.1 e (pPKPdf)Z

GRA1 06:19:13.7 e L Z T19.1 A50

1998-07-07

GRA1 09:45:55.6 e PKPdf Z

GRA1 09:46:03.3 e (pPKPdf)Z

NEIC: OT 09:26:37.3 17.3S 174.1W dep150km mb4.3

TONGA ISLANDS

1998-07-07 D161.8

GRA1 14:37:48.7 e PKPdf Z

GRA1 14:38:01.0 e pPKPdf Z

GRA1 14:38:36.4 e PKPab Z

GRA1 14:38:47.7 e pPKPab Z

GRA1 15:45:27.0 e L Z T21.4 A84 MS4.6

1998-07-07 D 85.8 AZ 42

GRA1 14:44:32.5 e P Z mb5.2

ALIGN 14:44:32.5 T1.1 A19

GRA1 14:44:40.0 e pP Z
 GRA1 14:44:42.4 e sP Z
 GRA1 15:53:35.4 e L Z T20.4 A286 MS4.7
 SZGRF: OT 14:31:56.2 32.8N 139.2E dep 25km
 SOUTH OF HONSHU, JAPAN

1998-07-07 D 87.3
 GRA1 18:43:02.9 e P Z mb5.3
 BEAM 18:43:02.9 T2.4 A59
 GRA1 18:43:14.6 e pP Z
 GRA1 19:26:23.1 e L Z T18.6 A722 MS5.1

1998-07-07 D 89.7
 GRA1 20:14:39.3 e P Z mb4.8
 BEAM 20:14:39.3 T1.6 A11
 GRA1 20:52:08.8 e L Z T20.3 A1392 MS5.4
 NEIC: OT 20:01:35.3 23.7N 108.4W dep 10km mb5.0
 GULF OF CALIFORNIA

1998-07-08 D 62.7 AZ 79
 GRA1 03:55:27.6 e P c Z mb5.3
 ALIGN 03:55:27.6 T1.2 A29
 GRA1 03:57:45.9 e PP Z
 GRA1 04:25:27.3 e L Z T18.3 A253 MS4.4
 SZGRF: OT 03:45:06.9 27.4N 90.1E dep 33km
 BHUTAN

1998-07-08 D 76.0 AZ 18
 GRA1 12:31:24.1 i P d Z mb5.1
 ALIGN 12:31:24.1 T1.0 A17
 GRA1 12:31:37.2 e pP Z
 NEIC: OT 12:19:48.2 53.5N 161.6E dep 33km mb4.8
 OFF EAST COAST OF KAMCHATKA

1998-07-08 D 96.6
 GRA1 15:16:08.0 e Pdiff Z
 BEAM 15:16:08.0 T1.3 A9
 GRA1 15:16:20.9 e Z
 GRA1 15:16:37.0 e Z
 GRA1 15:20:14.1 e (PP) Z
 GRA1 16:08:55.2 e L Z T20.4 A220 MS4.6
 NEIC: OT 15:02:43.0 6.2S 104.1E dep 70km mb5.5
 SUNDA STRAIT

1998-07-08 D 62.2 AZ207
 GRA1 18:38:57.3 i P d Z mb5.1
 ALIGN 18:38:57.3 T1.1 A13
 GRA1 18:39:04.4 e (pP) Z

GRA1 19:03:47.1 e L Z T21.4 A215 MS4.3
SZGRF: OT 18:28:36.3 9.1S 12.6W dep 25km
ASCENSION ISLAND REGION

1998-07-09

GRA1 01:04:36.4 e (Pg) Z
GRA1 01:05:24.9 e Sg N
NEIC: OT 01:03:25.2 46.5N 13.7E dep 10km
AUSTRIA

1998-07-09 D 64.3 AZ206

GRA1 01:40:49.7 e P Z mb4.7
BEAM 01:40:49.7 T1.5 A8
GRA1 01:40:57.2 e pP Z
SZGRF: OT 01:30:14.8
ASCENSION ISLAND REGION

1998-07-09 D 15.0 AZ158

GRA1 01:44:51.7 e P Z

1998-07-09 D 42.8 AZ231

GRA1 02:03:09.5 e P Z mb4.0
BEAM 02:03:09.5 T0.8 A3
NEIC: OT 01:52:13.0 44.7N 73.7W dep 0km
NEW YORK

1998-07-09 D 30.2

GRA1 05:25:20.9 i P c Z mb5.8
ALIGN 05:25:20.9 T2.0 A331
GRA1 05:29:13.0 e S Z
GRA1 05:34:40.0 e L Z T20.0 A18399 MS5.7

1998-07-09 D 63.1 AZ206

GRA1 07:23:38.1 e P Z mb4.7
BEAM 07:23:38.1 T1.1 A8
GRA1 07:23:43.7 e (pP) Z
SZGRF: OT 07:13:10.2
ASCENSION ISLAND REGION

1998-07-09 D 78.3

GRA1 08:49:44.1 i P d Z mb5.0
ALIGN 08:49:44.1 T0.9 A11
GRA1 08:49:47.4 e Z
GRA1 08:50:28.9 e pP Z

1998-07-09 D 28.8 AZ 97

GRA1 14:25:14.8 i P c Z mb6.0
 ALIGN 14:25:14.8 T1.1 A296
 GRA1 14:28:23.6 i PcP d Z
 GRA1 14:30:13.0 e S Z
 GRA1 14:32:05.5 e ScP Z
 GRA1 14:32:20.6 e (PcS) Z
 GRA1 14:38:35.6 e L Z T20.1 A4462 MS5.1

 1998-07-09 D159.5

GRA1 15:05:23.3 e PKPdf Z
 GRA1 15:06:03.4 e PKPab Z
 GRA1 15:09:42.6 e PP Z
 GRA1 16:22:53.8 e L Z T20.8 A5252 MS6.4
 NEIC: OT 14:45:40.3 30.4S 179.0W dep129km mb6.1
 KERMADEC ISLANDS, NEW ZEALAND

 1998-07-09 D 57.9 AZ212

GRA1 16:33:21.5 e P Z mb5.3
 ALIGN 16:33:21.5 T1.6 A55
 GRA1 16:33:28.9 e pP Z
 GRA1 16:33:35.0 e sP Z
 GRA1 16:35:23.6 e PP Z
 GRA1 16:54:08.1 e L Z T21.4 A1849 MS5.2
 SZGRF: OT 16:23:30.7 3.7S 15.3W dep 30km
 NORTH OF ASCENSION ISLAND

 1998-07-09 D 16.2

GRA1 17:40:40.4 i P d Z mb4.3
 BEAM 17:40:40.4 T1.4 A34
 GRA1 17:47:03.1 e L Z T18.0 A582 MS3.8

 1998-07-09 D 69.8

GRA1 19:50:37.7 i P c Z mb5.7
 ALIGN 19:50:37.7 T1.8 A110
 GRA1 19:50:52.6 e Z
 GRA1 19:50:58.7 e Z
 GRA1 19:51:11.9 e pP Z
 NEIC: OT 19:39:44.0 60.5N 153.1W dep143km mb5.4
 SOUTHERN ALASKA

 1998-07-09

GRA1 20:19:44.6 e (PKPab) Z

 1998-07-09 D 84.8 AZ 35

GRA1 22:50:44.4 i P c Z mb4.9
 ALIGN 22:50:44.4 T1.1 A10

SZGRF: OT 22:38:14.7 37.0N 145.6E dep 33km
OFF EAST COAST OF HONSHU, JAPAN

1998-07-10 D 78.8 AZ 3
GRA1 00:18:48.3 i P d Z mb4.9
ALIGN 00:18:48.3 T1.4 A18
GRA1 00:18:54.6 e pP Z
GRA1 00:18:59.5 e sP Z
SZGRF: OT 00:06:49.4 51.8N 173.1W dep 25km
ANDREANOF ISLANDS, ALEUTIAN IS.

1998-07-10 D 83.1 AZ 34
GRA1 05:41:26.2 e P Z mb5.1
ALIGN 05:41:26.2 T1.3 A16
GRA1 05:41:35.3 e (pP) Z
GRA1 05:42:00.9 e Z
GRA1 06:20:13.0 e L Z T19.1 A188 MS4.5
SZGRF: OT 05:29:04.6 39.0N 146.0E dep 32km
OFF EAST COAST OF HONSHU, JAPAN

1998-07-10 D 55.8
GRA1 08:30:12.8 e P Z mb5.3
ALIGN 08:30:12.8 T1.7 A56
GRA1 08:30:20.2 e pP Z
GRA1 08:30:25.9 e sP Z
GRA1 08:54:02.6 e L Z T18.8 A167 MS4.1

1998-07-11 D 52.2 AZ 80
GRA1 00:14:12.4 e P Z mb4.3
BEAM 00:14:12.4 T1.2 A5
SZGRF: OT 00:05:05.3
TIBET

1998-07-11 D 30.4
GRA1 00:55:30.4 e P Z mb4.5
ALIGN 00:55:30.4 T1.4 A10
GRA1 01:06:19.6 e L Z T18.5 A556 MS4.2

1998-07-11 D 2.9 327km
GRC1 04:02:23.5 e Pg Z M12.9
GRA1 04:02:35.3 e Pg Z M13.1
GRA1 04:03:26.0 e Sg N
NEIC: OT 04:01:25.0 46.5N 13.7E dep 5km
AUSTRIA

1998-07-11 D 87.9
GRA1 05:34:17.5 e P c Z T17.5 A140
GRA1 05:37:46.5 e PP Z

GRA1 06:15:52.7 e L Z T19.5 A363 MS4.8
NEIC: OT 05:21:20.9 17.9N 101.1W dep 73km mb4.5
NEAR COAST OF GUERRERO, MEXICO

1998-07-12

GRA1 00:33:35.5 e PKPdf Z
GRA1 00:33:47.7 e pPKPdf Z
GRA1 01:40:15.5 e L Z T20.8 A391
NEIC: OT 00:14:06.0 18.2S 168.1E dep 33km mb4.6
VANUATU ISLANDS

1998-07-12

GRA1 02:45:37.1 e PKPab Z

1998-07-12

D 84.3 AZ 58
GRA1 05:05:17.9 i P c Z mb4.9
ALIGN 05:05:17.9 T1.3 A9
GRA1 05:05:32.7 e (pP) Z
GRA1 05:53:02.1 e L Z T19.4 A463 MS4.9
SZGRF: OT 04:52:52.4 24.5N 122.6E dep 51km
TAIWAN REGION

1998-07-12

D 76.3
GRA1 07:06:16.6 e P Z mb4.3
BEAM 07:06:16.6 T1.5 A4

1998-07-12

D 45.8
GRA1 07:24:37.2 i P d Z mb4.9
ALIGN 07:24:37.2 T1.0 A13
GRA1 07:24:44.2 e pP Z
GRA1 07:24:47.2 e sP Z
GRA1 07:25:26.7 e Z
GRA1 07:26:28.9 e PP Z
GRA1 07:44:28.4 e L Z T21.7 A413 MS4.3
NEIC: OT 07:16:16.6 47.7N 82.9E dep 33km mb4.9
KAZAKHSTAN-XINJIANG BORDER REG.

1998-07-12

GRA1 07:48:05.8 e (PKPdf) Z

1998-07-12

D 90.5
GRA1 08:24:28.3 e P Z mb5.0
BEAM 08:24:28.3 T1.5 A14
GRA1 08:24:34.1 e (pP) Z
GRA1 09:07:38.2 e L Z T19.0 A344 MS4.8

1998-07-12 D 78.1
GRA1 11:27:39.5 i P c Z mb5.5
ALIGN 11:27:39.5 T0.9 A37
GRA1 11:28:22.3 e pP Z
NEIC: OT 11:15:59.0 52.7N 174.3W dep173km mb5.0
ANDREANOF ISLANDS, ALEUTIAN IS.

1998-07-12 D 46.6
GRA1 21:00:41.2 e P Z mb4.7
BEAM 21:00:41.2 T1.0 A6
GRA1 21:00:50.2 e pP Z
GRA1 21:25:50.7 e L Z T14.9 A446 MS4.5

1998-07-12 D 46.5
GRA1 22:24:20.9 e P Z mb4.9
BEAM 22:24:20.9 T1.4 A13
GRA1 22:24:29.8 e pP Z
GRA1 22:49:37.4 e L Z T15.8 A462 MS4.5

1998-07-12 D 4.9 544km
GRA1 22:30:42.9 e Pn Z
GRA1 22:32:04.8 e Sg E
SZGRF: OT 22:29:27.2 50.1N 18.8E dep 1km
POLAND

1998-07-13 D 14.4
GRA1 02:51:54.7 e P Z
BEAM 02:51:54.7 T1.6 A8
GRA1 02:52:05.7 e P1 Z
GRA1 02:57:34.9 e L Z T21.3 A155 MS3.1

1998-07-13
GRA1 09:20:58.1 e PKPdf Z
GRA1 10:23:58.5 e L Z T21.8 A87
NEIC: OT 09:01:36.2 19.5S 169.4E dep150km mb4.4
VANUATU ISLANDS

1998-07-14 D 30.7 AZ 99
GRA1 01:09:48.0 e P Z mb4.5
BEAM 01:09:48.0 T1.3 A8
GRA1 01:10:01.1 e (pP) Z
GRA1 01:34:00.5 e L Z T18.4 A96 MS3.5
SZGRF: OT 01:03:38.8
CASPIAN SEA

1998-07-14

GRA1 01:14:39.3 e PKPdf Z

1998-07-14

GRA1 12:43:05.5 e (P) Z
NEIC: OT 12:24:10.2 18.0S 178.1W dep450km mb4.4
FIJI ISLANDS REGION

1998-07-14 D 45.4 AZ 95

GRA1 14:33:36.4 e P Z mb5.0
BEAM 14:33:36.4 T2.3 A43
GRA1 14:33:50.1 e (pP) Z
GRA1 14:57:40.3 e L Z T20.6 A164 MS4.0
SZGRF: OT 14:25:24.1 29.9N 66.0E dep 52km
PAKISTAN

1998-07-14 D 83.9 AZ 39

GRA1 22:22:07.7 e P Z mb4.8
BEAM 22:22:07.7 T0.9 A5
SZGRF: OT 22:09:42.6 35.6N 140.3E dep 33km
NEAR EAST COAST OF HONSHU, JAPAN

1998-07-15 D151.3

GRA1 04:37:03.2 e PKPdf Z
GRA1 04:37:07.7 i PKPbc d Z
GRA1 04:37:16.3 e PKPab Z
NEIC: OT 04:18:13.8 20.8S 178.6W dep500km mb4.6
FIJI ISLANDS REGION

1998-07-15 D 82.9

GRA1 05:05:45.3 i P d Z mb5.2
ALIGN 05:05:45.3 T1.6 A28
GRA1 05:05:52.2 e pP Z
GRA1 05:40:11.7 e L Z T20.0 A197 MS4.5

1998-07-15 D 70.9

GRA1 16:49:00.9 e P Z mb4.7
BEAM 16:49:00.9 T1.0 A6
NEIC: OT 16:37:51.9 59.3N 152.4W dep 89km mb4.7
SOUTHERN ALASKA

1998-07-15 D 74.7 AZ 25

GRA1 17:34:05.8 e P Z mb4.6
BEAM 17:34:05.8 T1.3 A8
SZGRF: OT 17:22:31.1 50.4N 151.7E dep 33km
NORTHWEST OF KURIL ISLANDS

1998-07-16 D 80.6 AZ 27

GRA1 01:47:02.5 e P Z mb4.7
BEAM 01:47:02.5 T1.0 A8
GRA1 01:47:18.8 e pP Z
SZGRF: OT 01:34:58.2 44.1N 152.3E dep 58km
KURIL ISLANDS REGION

1998-07-16 D105.7
GRA1 06:32:32.7 e Pdiff Z
GRA1 07:23:18.7 e L Z T20.0 A1247 MS5.5
NEIC: OT 06:18:24.6 12.1N 143.2E dep 33km mb5.5
SOUTH OF MARIANA ISLANDS

1998-07-16 D149.5
GRA1 07:24:20.7 e PKPdf Z
GRA1 07:24:23.9 i PKPbc d Z
GRA1 07:24:29.3 e PKPab Z
GRA1 07:26:23.0 e (PP) Z
NEIC: OT 07:05:42.9 18.3S 178.4W dep589km mb4.0
FIJI ISLANDS REGION

1998-07-16 D 18.4
GRA1 10:19:17.6 e P Z
NEIC: OT 10:15:01.1 34.6N 25.5E dep 33km mb4.9
CRETE

1998-07-16 D136.2
GRA1 12:12:55.9 e Pdiff Z
GRA1 12:15:27.6 e Z
GRA1 12:15:46.4 e PKPdf Z
GRA1 12:16:12.1 e pPKPdf Z
GRA1 12:18:24.4 e PP Z
GRA1 12:18:51.1 e pPP Z
GRA1 12:19:07.0 e sPP Z
GRA1 13:08:04.1 e L Z T21.7 A17759 MS6.8
NEIC: OT 11:56:36.5 11.0S 166.1E dep110km mb6.3
SANTA CRUZ ISLANDS

1998-07-16 D 16.3
GRA1 15:32:50.2 e Pn Z
GRA1 15:33:53.0 e (Sn) Z
NEIC: OT 15:31:09.6 44.4N 10.3E dep 10km
NORTHERN ITALY

1998-07-16 D 12.9
GRA1 17:32:17.1 e P c Z
GRA1 17:38:52.6 e L Z T20.8 A2452 MS4.2

1998-07-16 D 78.7 AZ 48

GRA1 20:21:04.7 i P d Z T1.2 A15 mb4.9
 GRA1 20:21:09.3 e pP Z
 SZGRF: OT 20:09:04.4
 SOUTH KOREA

1998-07-16

GRA1 21:34:34.3 e PKPdf Z
 GRA1 21:34:47.6 e pPKPdf Z

1998-07-16

GRA1 22:45:24.4 e Pg Z
 GRA1 22:46:09.8 e Sg Z

1998-07-17 D143.6

GRA1 02:38:29.0 e PKPdf Z
 GRA1 02:38:43.7 e pPKPdf Z
 GRA1 03:44:57.7 e L Z T21.4 A301 MS5.0
 NEIC: OT 02:18:58.6 18.1S 168.2E dep 33km mb5.2
 VANUATU ISLANDS

1998-07-17 D 84.3

GRA1 05:03:47.7 e P Z mb5.7
 ALIGN 05:03:47.7 T1.3 A68
 GRA1 05:07:02.0 e PP Z
 GRA1 05:44:08.0 e L Z T21.4 A3301 MS5.7
 NEIC: OT 04:51:17.7 23.4N 120.8E dep 33km mb5.5
 TAIWAN

1998-07-17 D 87.2 AZ279

GRA1 09:01:43.1 e P Z mb5.3
 ALIGN 09:01:43.1 T1.5 A42
 SZGRF: OT 08:49:00.2 8.3N 84.1W dep 33km
 OFF COAST OF COSTA RICA

1998-07-17 D117.5

GRA1 09:08:20.4 e PKPdf Z
 GRA1 09:08:33.0 e (pPKPdf) Z
 GRA1 09:09:28.6 e PP Z
 GRA1 09:18:53.0 e PKPbc Z
 GRA1 09:22:42.7 e SKPbc Z
 GRA1 10:02:30.3 e L Z T19.8 A67164 MS7.3
 NEIC: OT 08:49:16.2 2.9S 141.8E dep 33km mb5.9
 NEAR N COAST OF NEW GUINEA, PNG.

1998-07-17 D117.7

GRA1 09:28:18.5 e PKPdf Z
 GRA1 09:28:51.7 e PP Z

 1998-07-17 D 75.5
 GRA1 15:25:06.6 i P c Z mb5.2
 ALIGN 15:25:06.6 T1.0 A23
 GRA1 15:26:53.3 e (pP) Z
 NEIC: OT 15:14:14.5 48.3N 146.1E dep488km mb4.5
 SEA OF OKHOTSK

1998-07-17 D149.9
 GRA1 21:15:07.4 e PKPdf Z
 GRA1 21:15:12.8 e PKPbc Z
 GRA1 21:15:20.8 e PKPab Z
 GRA1 21:17:16.8 e pPKPbc Z

1998-07-17 D 94.7
 GRA1 22:17:10.6 i P c Z mb5.9
 ALIGN 22:17:10.6 T1.5 A80
 GRA1 22:20:45.4 e Z
 GRA1 22:20:57.9 e PP Z
 GRA1 23:08:06.2 e L Z T21.5 A355 MS4.8
 NEIC: OT 22:03:52.4 4.7S 103.1E dep 49km mb5.7
 SOUTHERN SUMATERA, INDONESIA

1998-07-18 D 53.2 AZ 78
 GRA1 01:49:39.4 e P Z mb4.5
 BEAM 01:49:39.4 T1.8 A11
 GRA1 02:13:41.0 e L Z T21.0 A133 MS4.0
 SZGRF: OT 01:40:25.0
 TIBET

1998-07-18 D156.3
 GRA1 04:38:03.3 e PKPab Z

1998-07-18
 GRA1 06:14:12.0 e PKPab Z
 GRA1 06:14:24.9 e (pPKPab) Z
 GRA1 07:20:40.0 e L Z T20.3 A167
 NEIC: OT 05:54:36.6 17.5S 168.5E dep 33km mb4.7
 VANUATU ISLANDS

1998-07-18 D 49.9
 GRA1 06:30:10.7 e P Z mb4.6
 ALIGN 06:30:10.7 T0.9 A7
 GRA1 06:30:13.5 e Z
 GRA1 06:54:38.9 e L Z T18.9 A196 MS4.1

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1998-07-18      D150.9
  GRA1 07:34:46.1 e (PKPdf) Z
  GRA1 07:34:51.5 e PKPbc   Z
  GRA1 07:34:57.9 e PKPab   Z

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1998-07-18      D124.7
  GRA1 07:54:52.4 e PKPdf   Z
  GRA1 07:55:06.8 e pPKPdf  Z
  GRA1 08:49:23.2 e L       Z T21.9 A274 MS4.9
NEIC: OT 07:35:55.5 5.6S 151.0E dep 33km mb5.2
      NEW BRITAIN REGION, P.N.G.

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1998-07-18
  GRA1 16:17:49.6 e PKPbc   Z
  GRA1 16:17:58.5 e PKPab   Z

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1998-07-18      D 83.9
  GRA1 16:30:53.9 e P       Z mb4.8
  BEAM 16:30:53.9          T1.5 A9

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1998-07-18      D143.8
  GRA1 17:00:50.7 e PKPdf   Z
  GRA1 17:04:23.0 e PP      Z
  GRA1 18:07:31.0 e L       Z T21.1 A3020 MS6.0

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1998-07-18      D 3.7 409km
  GRA1 22:45:21.0 e Pn      Z M13.5
  GRA1 22:46:21.9 e Sg      E
SZGRF: OT 22:44:24.4 51.5N 16.3E dep 1km
      POLAND

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1998-07-19      D 87.9
  GRA1 00:04:19.1 e P       Z mb4.6
  BEAM 00:04:19.1          T1.2 A4

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1998-07-19      D 70.3 AZ127
  GRA1 02:27:15.1 e (P)    Z mb4.6
  BEAM 02:27:15.1          T2.2 A12

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1998-07-19      D 23.6 AZ 92
  GRA1 06:12:10.9 e P       Z mb4.0
  BEAM 06:12:10.9          T0.9 A5
  GRA1 06:12:15.9 e pP     Z
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SZGRF: OT 06:07:01.4
WESTERN CAUCASUS

1998-07-19 D 16.8
GRA1 06:20:48.3 e P Z T1.2 A72 mb4.7
GRA1 06:21:04.4 e Z
GRA1 06:28:30.9 e L Z T18.6 A317 MS3.6

1998-07-19
GRA1 06:44:11.4 e PKPdf Z

1998-07-19 D 67.6
GRA1 09:38:24.7 i P d Z mb5.0
ALIGN 09:38:24.7 T1.0 A11
NEIC: OT 09:27:40.6 18.2N 65.0W dep132km mb4.6
PUERTO RICO REGION

1998-07-19 D 3.6 401km
GRA1 10:33:13.8 e Pn Z M13.6
GRA1 10:34:11.9 e Sg E
SZGRF: OT 10:32:16.4 51.4N 16.2E dep 1km
POLAND

1998-07-19 D132.5
GRA1 15:20:02.3 e PKPdf Z
GRA1 16:08:44.5 e L Z T22.0 A398 MS5.1

1998-07-19 D151.6
GRA1 16:18:19.5 e PKPdf Z
GRA1 16:18:26.5 e PKPab Z
GRA1 16:18:41.3 e pPKPdf Z
GRA1 16:18:47.6 e pPKPab Z
GRA1 16:22:22.6 e PP Z
GRA1 17:30:23.6 e L Z T21.1 A1121 MS5.6

1998-07-19 D 3.6 403km
GRA1 16:50:50.6 e Pn Z M13.9
GRA1 16:51:48.7 e Sg N
SZGRF: OT 16:49:53.1 51.5N 16.2E dep 1km
POLAND

1998-07-19 D 57.5 AZ 80
GRA1 17:05:38.6 e P d Z mb4.8
ALIGN 17:05:38.6 T1.1 A11
GRA1 17:05:41.9 e Z

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GRA1 17:05:50.9 e pP      Z
GRA1 17:05:56.2 e (sP)   Z
SZGRF: OT 16:55:55.2 30.4N 85.2E dep 45km
TIBET
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1998-07-19      D 57.1  AZ 78
GRA1 17:06:58.7 e P      Z      mb4.5
BEAM 17:06:58.7          T0.9  A4
SZGRF: OT 16:57:16.4 31.6N 85.9E dep 33km
TIBET
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1998-07-19      D 95.1  AZ 56
GRA1 18:11:01.2 e P      Z      mb4.6
BEAM 18:11:01.2          T0.8  A2
GRA1 19:14:56.5 e L      Z      T19.8 A273  MS4.7
SZGRF: OT 17:57:42.2
PHILIPPINE SEA
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1998-07-19      D 86.3  AZ147
GRA1 20:59:12.4 i P      d Z      mb4.8
ALIGN 20:59:12.4          T1.1  A9
GRA1 20:59:26.0 e (pP)   Z
NEIC: OT 20:45:59.1 36.2S 53.3E dep 33km mb4.7
SOUTH INDIAN OCEAN
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1998-07-19      D 87.1  AZ287
GRA1 21:00:16.4 e P      Z      mb4.5
BEAM 21:00:16.4          T0.9  A3
GRA1 21:40:35.5 e L      Z      T19.8 A76  MS4.1
SZGRF: OT 20:47:34.0 13.3N 90.1W dep 33km
NEAR COAST OF GUATEMALA
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1998-07-20      D 59.8
GRA1 01:16:01.8 e P      Z      mb5.6
ALIGN 01:16:01.8          T1.6  A99
GRA1 01:16:50.0 e        Z
GRA1 01:17:55.4 e        Z
GRA1 01:18:14.3 e PP     Z
GRA1 01:24:08.1 e S      Z
GRA1 01:42:46.7 e L      Z      T21.7 A3429  MS5.4
NEIC: OT 01:05:58.3 30.1N 88.1E dep 33km mb5.3
XIZANG
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1998-07-20      D 60.4  AZ 79
GRA1 01:28:16.9 e P      Z      mb4.5
BEAM 01:28:16.9          T1.1  A5
NEIC: OT 01:18:14.0 30.1N 88.1E dep 33km mb4.6
XIZANG
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1998-07-20 D 61.4 AZ 78
 GRA1 01:41:21.3 e P Z mb4.3
 BEAM 01:41:21.3 T1.2 A6
 SZGRF: OT 01:31:09.3 29.3N 90.1E dep 33km
 TIBET

 1998-07-20
 GRA1 01:45:37.2 e PKPdf Z

 1998-07-20 D 21.1 AZ326
 GRA1 03:25:31.1 e P Z mb3.7
 BEAM 03:25:31.1 T1.4 A6
 SZGRF: OT 03:20:49.5 64.7N 16.9W dep 33km
 ICELAND

 1998-07-20 D 83.7 AZ 55
 GRA1 16:47:56.5 e P Z mb4.9
 ALIGN 16:47:56.5 T0.9 A8
 GRA1 16:48:10.9 e pP Z
 GRA1 17:30:14.0 e L Z T19.7 A184 MS4.5
 SZGRF: OT 16:35:34.0 27.0N 125.0E dep 50km
 NORTHEAST OF TAIWAN

 1998-07-20 D149.4
 GRA1 18:50:39.4 e PKPdf Z
 GRA1 18:50:44.7 i PKPbc d Z
 GRA1 18:50:52.0 e PKPab Z

 1998-07-20 D 23.5 AZ255
 GRA1 21:15:14.9 e (P) Z mb3.9
 BEAM 21:15:14.9 T0.6 A3

 1998-07-21 D 59.8
 GRA1 14:50:49.1 i P d Z mb5.1
 BEAM 14:50:49.1 T1.3 A24
 GRA1 14:51:36.4 e Z
 GRA1 15:18:19.4 e L Z T19.4 A633 MS4.8
 NEIC: OT 14:40:47.3 30.3N 88.1E dep 33km mb4.9
 XIZANG

 1998-07-21 D 18.0
 GRA1 15:23:45.4 i P c Z mb4.7
 BEAM 15:23:45.4 T1.4 A83
 GRA1 15:31:26.0 e L Z T19.4 A389 MS3.7

1998-07-21 D 78.6 AZ 52
GRA1 17:35:55.1 i P c Z mb4.8
BEAM 17:35:55.1 T2.1 A23
GRA1 17:36:04.3 e pP Z
GRA1 18:17:53.0 e L Z T18.2 A370 MS4.8
SZGRF: OT 17:23:57.3 32.8N 124.2E dep 32km
OFF COAST OF EASTERN CHINA

1998-07-21
GRA1 19:01:51.6 i PKPdf d Z

1998-07-22 D103.7
GRA1 02:40:44.3 e PP Z
NEIC: OT 02:22:33.8 .1N 123.3E dep167km mb5.0
MINAHASSA PENINSULA, SULAWESI

1998-07-22 D 2.3 251km
GRA1 15:35:23.6 e Pn Z M12.6
GRA1 15:36:20.6 e Sg Z

1998-07-22
GRA1 19:10:16.1 i PKPab c Z
NEIC: OT 18:50:47.0 18.0S 169.3E dep 33km mb4.8
VANUATU ISLANDS

1998-07-22 D 4.2 463km
GRA1 15:35:22.4 e Pg Z M13.4
GRA1 15:36:19.3 e Sg N
SZGRF: OT 15:34:06.0 45.7N 12.8E dep 10km
NORTHERN ITALY

1998-07-23 D 20.8
GRA1 03:41:04.0 e P Z T1.2 A23 mb4.4
NEIC: OT 03:37:33.3 37.1N 21.1E dep 33km mb4.2
SOUTHERN GREECE

1998-07-23 D 88.8
GRA1 11:38:06.1 e P Z T1.0 A18 mb5.3
SZGRF: OT 11:25:16.6 28.7N 138.1E dep 33km
BONIN ISLANDS REGION

1998-07-23 D 2.8 314km
GRA1 21:12:56.2 e Pn Z
GRA1 21:13:40.6 e Sg N

1998-07-23 D 3.7 407km

GRA1 23:23:13.5 e Sg N M13.0
SZGRF: OT 23:21:17.2 51.4N 16.3E dep 1km
POLAND

1998-07-24 D 85.8 AZ 63
GRA1 18:56:45.4 e P Z T1.7 A158 mb5.9
GRA1 19:00:09.6 e PP Z
GRA1 19:07:19.8 e S E
GRA1 19:37:34.7 e L Z T20.1 A11608 MS6.3
SZGRF: OT 18:44:09.7 20.5N 119.7E dep 33km
PHILIPPINE ISLANDS REGION

1998-07-25 D138.9
GRA1 02:58:37.3 e PKP Z
GRA1 02:58:46.1 e Z
GRA1 03:01:50.3 e PP Z
GRA1 04:02:36.4 e L Z T21.6 A3369 MS6.0
NEIC: OT 02:39:23.8 13.6S 166.8E dep 43km mb5.9
VANUATU ISLANDS

1998-07-25
GRA1 06:15:25.9 e PKP Z
GRA1 06:15:46.4 e Z

1998-07-25
GRA1 07:04:23.1 e (P) Z

1998-07-25
GRA1 12:10:08.5 e PKP Z

1998-07-26
GRB5 03:25:19.7 e PKP Z
NEIC: OT 03:06:40.0 17.9S 178.5W dep600km mb4.0
FIJI ISLANDS REGION

1998-07-26 D 58.6
GRA1 03:48:14.7 e P Z T1.1 A32 mb5.3
GRA1 03:48:28.6 e pP Z
SZGRF: OT 03:38:21.6 2.8S 19.6W dep 50km
CENTRAL MID-ATLANTIC RIDGE

1998-07-26 D 78.9 AZ 29
GRA1 12:40:12.3 e P Z
SZGRF: OT 12:28:14.0 45.0N 149.3E dep 33km
KURIL ISLANDS

1998-07-26 D 2.3 257km
GRC1 12:47:23.7 e Pg Z
GRA1 12:48:10.1 e Sg E M12.8
SZGRF: OT 12:46:40.5 47.2N 9.4E dep 10km
Vaduz/Liechtenstein, Swiss-Liechtenstein-Austrian borde

1998-07-26 D 73.8 AZ 17
GRA1 20:00:36.2 e P Z T1.4 A22 mb5.0
SZGRF: OT 19:49:06.8 54.3N 163.3E dep 33km
OFF EAST COAST OF KAMCHATKA

1998-07-27
GRA1 10:14:14.1 e PKP Z
NEIC: OT 09:55:28.4 21.0S 178.7W dep598km mb4.2
FIJI ISLANDS REGION

1998-07-27 D 67.3
GRA1 19:14:08.9 e P Z T1.6 A19 mb5.1
GRA1 19:14:24.6 e pP Z
SZGRF: OT 19:03:21.2 23.4N 93.0E dep 57km
INDIA-BANGLADESH BORDER REGION

1998-07-28
GRA1 04:39:08.9 e PKP Z

1998-07-28 D 48.7 AZ 72
GRA1 05:00:22.6 i P c Z
GRA1 05:02:13.3 e PP Z
GRA1 05:24:31.5 e L E T20.9 A600 MS4.6
SZGRF: OT 04:51:42.3 40.6N 81.5E dep 33km
SOUTHERN SINKIANG PROV., CHINA

1998-07-29 D 2.8 316km
GRC1 00:43:12.0 e Sg E
GRA1 00:43:31.1 e Sg E M12.9
SZGRF: OT 00:41:42.7 47.6N 15.2E dep 10km
AUSTRIA

1998-07-29
GRA1 01:26:05.0 e (P) Z
NEIC: OT 01:15:19.3 36.7N 105.4E dep 10km mb4.9
WESTERN NEI MONGOL, CHINA

1998-07-29 D 2.7 302km
GRA1 01:14:15.3 e Sg E M12.1
SZGRF: OT 01:12:49.3 47.2N 9.6E dep 10km
Feldkirch/A, Swiss-Liechtenstein-Austrian border region

1998-07-29 D109.3
GRA1 07:28:47.8 e Pdiff Z
GRA1 07:29:01.8 e pPdiff Z
GRA1 07:33:29.1 e PP Z
GRA1 07:39:20.4 e SKSac E
GRA1 07:41:07.8 e Sdiff N
GRA1 07:42:32.5 e SP Z
GRA1 08:16:19.2 e L Z T21.8 A12545 MS6.4
NEIC: OT 07:14:24.3 32.3S 71.3W dep 52km mb6.0
NEAR COAST OF CENTRAL CHILE

1998-07-29 D 23.2 AZ346
GRA1 13:21:07.7 e P Z T1.2 A24 mb4.6
SZGRF: OT 13:16:04.0 71.4N 5.9W dep 33km
JAN MAYEN ISLAND REGION

1998-07-29 D115.5
GRA1 18:15:30.9 e Pdiff Z
GRA1 18:20:15.1 e PP Z
GRA1 18:25:56.3 e SKSac E
GRA1 18:27:55.3 e Sdiff N
GRA1 18:29:45.1 e PS Z
GRA1 18:36:12.9 e SS N
GRA1 19:12:38.6 e L Z T19.0 A21579 MS6.8
NEIC: OT 18:00:30.0 2.7S 138.9E dep 33km mb5.9
IRIAN JAYA, INDONESIA

1998-07-30 AZ 30
GRA1 09:54:20.0 e (P) Z
NEIC: OT 09:42:10.1 43.4N 149.5E dep 33km mb5.0
EAST OF KURIL ISLANDS

1998-07-30
GRA1 14:42:35.4 e P Z T1.4 A28
GRA1 14:42:52.4 e Z

1998-07-30
GRA1 21:06:18.7 e PKP Z

1998-07-31 D147.2
GRA1 13:00:40.5 e PKP Z
GRA1 13:03:58.2 e PP Z
GRA1 14:10:31.9 e L Z T21.0 A2374 MS6.0
NEIC: OT 12:41:00.0 21.6S 169.8E dep 33km mb5.4
LOYALTY ISLANDS REGION

1998-07-31 D147.3

GRA1 13:07:46.7 e PKP Z

1998-07-31 D 3.5 393km
GRA3 14:23:23.7 e Pn Z
GRA1 14:23:24.7 e Pn Z M13.9
GRA1 14:24:22.9 e Sg E
SZGRF: OT 14:22:28.1 51.5N 16.2E dep 1km

POLAND

1998-07-31 D 3.5 394km
GRA3 16:51:57.9 e Pn Z
GRA1 16:51:59.1 e Pn Z M14.2
GRA1 16:52:57.8 e Sg N
SZGRF: OT 16:51:02.3 51.5N 16.1E dep 1km
POLAND

1998-07-31
GRA1 17:30:39.3 e PKP Z
NEIC: OT 17:11:28.1 15.1S 167.4E dep118km mb5.2
VANUATU ISLANDS

1998-07-31
GRA1 17:39:30.6 e PKP Z
NEIC: OT 17:26:15.9 17.3N 145.4E dep200km mb3.9
MARIANA ISLANDS

1998-07-31
GRA1 22:46:24.5 e PKP Z
