

MONTHLY TELESEISMIC BULLETIN of SZGRF-ERLANGEN - October 1999

H. Aichele, K. Klinge, R. Hohl

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date          distance backazimut
station time   phase   comp per[s] ampl[nm] magn
. . . . .
SZGRF or NEIC-QED LOCATION
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1999-10-01      D 83.7  AZ 39
  GRA1 03:59:21.9 e P      Z      mb4.7
  BEAM 03:59:21.9                T0.9  A4
NEIC: OT 03:47:12.5 39N 139E dep 33km mb4.5
  NEAR WEST COAST OF HONSHU, JAPAN
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1999-10-01      D 2.3  256km
  GRC2 07:09:58.5 e Pn     Z
  GRA1 07:10:11.4 e Pn     Z      M13.2
  GRA1 07:10:59.5 e Sg     N
NEIC: OT 07:08:58.1 46N 14E  dep 10km
  AUSTRIA
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1999-10-01
  GRA1 10:50:27.4 e (PKP)  Z
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1999-10-01
  GRA1 13:06:44.5 e (P)   Z
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1999-10-01
  GRA1 18:16:40.1 e (Pn)  Z
  GRA1 18:17:38.8 e Sg    E
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1999-10-01
  GRA1 22:42:25.8 e (P)   Z
  BEAM 22:42:25.8                T1.5  A12
  GRA1 22:42:39.5 e      Z
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1999-10-02
  GRA1 00:27:51.9 i PKP   c Z

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1999-10-02

GRA1 02:29:03.6 e P Z  
BEAM 02:29:03.6 T4.3 A306  
GRA1 02:38:33.0 e L Z T20.7 A122

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1999-10-02 D 84.5 AZ 59

GRA1 17:26:48.8 i P c Z mb5.1  
BEAM 17:26:48.8 T1.2 A14  
GRA1 18:09:05.2 e L Z T19.5 A472 MS4.9  
SZGRF: OT 17:14:19.8 24N 122E dep 33km  
TAIWAN REGION

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1999-10-02 D 83.4 AZ 33

GRA1 21:20:54.9 i P d Z mb6.0  
BEAM 21:20:54.9 T1.0 A92  
GRA1 21:59:17.9 e L Z T19.4 A2725 MS5.6  
SZGRF: OT 21:08:32.3 39N 147E dep 33km  
OFF EAST COAST OF HONSHU, JAPAN

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1999-10-02

GRA1 22:29:39.0 e P Z  
BEAM 22:29:39.0 T1.1 A8

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1999-10-03 D 83.5 AZ 40

GRA1 04:18:24.6 e P Z mb4.6  
BEAM 04:18:24.6 T0.8 A3  
SZGRF: OT 04:06:01.3 36N 139E dep 33km  
NEAR S. COAST OF HONSHU, JAPAN

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1999-10-03

GRC1 09:36:05.2 e (Pn) Z

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1999-10-04 D 10.2

GRA1 18:17:33.1 e Pg Z  
SZGRF: OT 18:14:31.6 44N 1W dep 10km  
PYRENEES

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1999-10-05 D 84.6 AZ 37

GRA1 00:51:03.4 i P c Z mb5.5  
BEAM 00:51:03.4 T1.2 A36  
GRA1 01:05:58.7 e L Z T19.5 A1182 MS5.3  
SZGRF: OT 00:38:34.4 36N 144E dep 33km  
OFF EAST COAST OF HONSHU, JAPAN

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1999-10-05 D 18.1

GRA1 00:57:36.4 i Pn c Z  
BEAM 00:57:36.4 T1.2 A52  
GRA1 01:05:58.7 e L Z T19.5 A1182 MS4.2  
NEIC: OT 00:53:28.8 37N 28E dep 33km mb4.9  
DODECANESE ISLANDS

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1999-10-05

GRA1 01:05:46.7 e PKP Z

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1999-10-05

GRA1 01:09:11.0 e Pn Z

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1999-10-05

GRA1 01:33:38.5 e (PKP) Z

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1999-10-05

GRA1 03:19:15.7 e (PKP) Z  
GRA1 04:06:57.9 e L Z T21.2 A177

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1999-10-05 D 80.1 AZ 12

GRA1 05:13:12.6 i P c Z mb4.9  
BEAM 05:13:12.6 T1.0 A17  
GRA1 05:50:41.6 e L Z T21.4 A600 MS4.9  
SZGRF: OT 05:01:07.9 49N 173E dep 33km  
ALEUTIAN ISLANDS REGION

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1999-10-05

GRA1 14:59:08.0 i PKP d Z

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1999-10-05 D 67.9 AZ 80

GRA1 17:15:22.0 e P Z mb5.5  
BEAM 17:15:22.0 T1.0 A30  
GRA1 17:45:04.5 e L Z T22.0 A210 MS4.3  
SZGRF: OT 17:04:26.9 23N 94E dep 33km  
BURMA-INDIA BORDER REGION

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1999-10-05 D 46.2 AZ 80

GRA1 18:06:44.5 e P Z mb4.9  
BEAM 18:06:44.5 T1.0 A12  
GRA1 18:27:54.8 e L Z T21.1 A86 MS3.7  
SZGRF: OT 17:58:23.2 38N 75E dep 33km  
TAJIK-SINKIANG BORDER REGION

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1999-10-06

GRA1 04:21:31.3 e PKP Z

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1999-10-06

GRA1 13:51:47.6 e (PKP) Z

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1999-10-06

GRA1 15:11:47.4 i PKP c Z

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1999-10-06

GRA1 21:11:50.1 e PKP Z

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1999-10-06

GRA1 23:35:50.3 i PKP c Z

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1999-10-06

D 6.6  
GRA1 16:28:30.0 e Pn Z  
SZGRF: OT 16:26:53.0 50N 1E dep 0km  
FRANCE

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1999-10-07

GRA1 01:42:03.3 e P Z  
BEAM 01:42:03.3 T1.6 A10  
NEIC: OT 01:34:05.3 40N 72E dep 33km mb4.5  
TAJIKISTAN

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1999-10-07

GRA1 03:21:00.8 i PKP c Z  
GRA1 03:21:11.7 e Z

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1999-10-07

D 78.8 AZ 5  
GRA1 05:02:00.9 i P d Z mb5.2  
BEAM 05:02:00.9 T1.0 A26  
SZGRF: OT 04:50:03.3 52N 177W dep 33km  
ANDREANOF ISLANDS, ALEUTIAN IS.

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1999-10-07

GRA1 10:05:02.8 e (Pg) Z  
GRA1 10:05:20.7 e (Sg) E

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1999-10-07

GRA1 10:16:37.9 i P c Z  
BEAM 10:16:37.9 T1.6 A17

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1999-10-07

GRA1 16:52:11.8 e (PKP) Z

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1999-10-08

GRA1 03:41:59.4 e PKP Z

GRA1 03:42:10.5 e Z

GRA1 03:42:23.8 e Z

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1999-10-08

GRA1 05:29:34.0 e PKP Z

GRA1 05:29:40.7 e Z

GRA1 06:48:52.0 e L Z T18.7 A1000

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1999-10-08

GRA1 17:50:48.0 e P Z

BEAM 17:50:48.0 T1.4 A13

GRA1 18:27:32.9 e L Z T20.7 A408

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1999-10-08

GRA1 20:49:20.6 e PKP Z

GRA1 20:49:27.7 e Z

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1999-10-08

GRA1 22:32:43.9 e PKP Z

GRA1 22:32:50.9 e Z

GRA1 22:32:58.7 e Z

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1999-10-09

GRA1 01:25:30.2 e (Pn) Z

GRA1 01:26:25.0 e Sg E

NEIC: OT 01:24:11.9 46N 15E dep 10km

NW BALKAN REGION

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1999-10-09

GRA1 10:04:54.8 e P Z

BEAM 10:04:54.8 T1.0 A6

GRA1 10:31:12.7 e L Z T18.9 A230

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1999-10-09

GRA1 11:25:16.2 e (P) Z

BEAM 11:25:16.2 T1.3 A8

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1999-10-09

GRA1 14:22:47.2 e PKP Z

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1999-10-09

GRA1 16:35:13.0 e (P) Z

BEAM 16:35:13.0 T1.0 A6

GRA1 17:01:42.3 e L Z T18.7 A164

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1999-10-09 D 75.4 AZ 18

GRA1 19:33:37.2 e P Z mb5.0

BEAM 19:33:37.2 T0.9 A14

NEIC: OT 19:21:51.3 50N 157E dep 63km mb4.4

KURIL ISLANDS

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1999-10-10

GRA1 01:47:41.9 i PKP c Z

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1999-10-10 D 69.8 AZ 75

GRA1 05:31:07.8 e P Z mb4.7

BEAM 05:31:07.8 T1.1 A7

SZGRF: OT 05:20:01.4

BURMA-CHINA BORDER REGION

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1999-10-10

GRA1 07:17:44.4 e P Z

BEAM 07:17:44.4 T1.5 A10

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1999-10-10

GRA1 07:22:29.0 e PKP Z

GRA1 07:32:00.3 e Z

GRA1 07:33:15.3 e Z

GRA1 08:18:46.2 e L Z T21.0 A2050

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1999-10-10 D 84.8 AZ 51

GRA1 12:16:51.7 i P d Z mb5.0

BEAM 12:16:51.7 T0.9 A10

GRA1 12:17:02.2 e Z

GRA1 12:59:28.3 e L Z T18.1 A603 MS5.0

SZGRF: OT 12:04:21.4 28N 129E dep 33km

RYUKYU ISLANDS

1999-10-10

GRA1 15:37:37.0 e (Pn) Z

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1999-10-10 D 79.9 AZ 26

GRA1 16:20:00.9 i P c Z mb4.6

BEAM 16:20:00.9 T1.1 A9

SZGRF: OT 16:07:56.9 45N 154E dep 33km

KURIL ISLANDS REGION

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1999-10-11

GRA1 20:45:07.9 i P c Z

BEAM 20:45:07.9 T1.0 A46

GRA1 20:45:15.8 e Z

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1999-10-12

GRA1 06:19:45.9 e PKP Z

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1999-10-12

GRA1 13:47:37.1 i PKP c Z

GRA1 13:47:44.8 e Z

GRA1 14:57:56.9 e L Z T20.8 A383

NEIC: OT 13:27:45.5 21S 175W dep 33km mb5.4

TONGA ISLANDS

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1999-10-12

GRA1 15:47:05.0 e P Z

BEAM 15:47:05.0 T0.7 A6

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1999-10-13 D 78.1 AZ355

GRA1 01:45:25.0 i P c Z mb6.1

BEAM 01:45:25.0 T1.0 A137

GRA1 01:55:05.9 e SKS E

GRA1 02:28:19.2 e L Z T18.3 A4854 MS5.9

SZGRF: OT 01:33:31.1 52N 161W dep 33km

SOUTH OF ALASKA

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1999-10-13 D 84.3 AZ 60

GRA1 01:52:20.6 i P d Z mb5.4

BEAM 01:52:20.6 T1.3 A35

GRA1 01:52:24.8 e Z

SZGRF: OT 01:39:52.9 24N 122E dep 33km

TAIWAN

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1999-10-13

GRA1 01:55:35.6 e (P) Z

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1999-10-13

GRA1 04:09:32.2 e (P) Z

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1999-10-13

GRA1 09:43:05.6 e (P) Z

BEAM 09:43:05.6 T1.0 A6

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1999-10-13

GRA1 18:16:44.7 i Pn c Z

NEIC: OT 18:12:22.3 35N 28E dep 33km mb4.1

EASTERN MEDITERRANEAN SEA

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1999-10-14

GRA1 02:59:00.2 e PKP Z

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1999-10-14

GRA1 03:01:01.1 e PKP Z

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1999-10-14 D 75.9 AZ 20

GRA1 17:45:57.0 e P Z mb5.3

BEAM 17:45:57.0 T1.5 A38

NEIC: OT 17:35:12.3 51N 151E dep482km mb4.9

SEA OF OKHOTSK

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1999-10-14 D 78.3 AZ 27

GRA1 18:55:39.8 i P c Z mb5.2

BEAM 18:55:39.8 T1.0 A20

NEIC: OT 18:44:31.2 47N 145E dep367km mb4.8

SEA OF OKHOTSK

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1999-10-15 D 76.7 AZ 27

GRA1 15:13:13.3 e P Z T0.8 A33 mb5.5

SZGRF: OT 15:01:26.8 48N 150E dep 33km

NORTHWEST OF KURIL ISLANDS

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1999-10-16

GRA1 05:00:37.9 e PKP Z

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1999-10-16 D 83.2

GRA1 08:26:48.7 i P c Z T1.4 A61 mb5.6

SZGRF: OT 08:14:26.7 37N 141E dep 33km

NEAR EAST COAST OF HONSHU, JAPAN



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1999-10-16      D 83.6
  GRA1 09:59:19.5 e P      Z T2.1  A2011  mb7.0
  GRA1 10:02:37.8 e PP     Z
  GRA1 10:09:45.3 e S      N
  GRA1 10:15:15.2 e SS     E
  GRA1 10:37:18.6 e L      Z T18.7 A523666 MS7.9
SZGRF: OT 09:46:55.6 35N 116W dep 33km
  SOUTHERN CALIFORNIA
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1999-10-16      D 84.5  AZ319
  GRA1 13:09:55.2 e P      Z T1.3  A48    mb5.6
SZGRF: OT 12:57:26.6 34N 117W dep 33km
  SOUTHERN CALIFORNIA
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1999-10-16      D 3.6  401km
  GRA1 15:23:16.3 e Pn     Z      M13.7
  GRA1 15:24:13.8 e Sg     E
SZGRF: OT 15:22:19.0 51N 16E dep 1km
  POLAND
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1999-10-16      D 90.2  AZ 44
  GRA1 16:50:24.3 e P      Z T0.8  A7     mb5.0
SZGRF: OT 16:37:28.0 28N 140E dep 33km
  BONIN ISLANDS REGION
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1999-10-16      D 39.1
  GRA1 20:29:53.3 e P      Z T1.1  A13    mb4.5
SZGRF: OT 20:22:28.8 17N 16W dep 33km
  NORTHWEST AFRICA
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1999-10-16      D 3.6  404km
  GRA1 21:49:15.7 e Pn     Z      M14.2
  GRA1 21:50:14.5 e Sg     N
SZGRF: OT 21:48:18.0 52N 16E dep 1km
  POLAND
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1999-10-17
  GRA1 06:42:48.7 e PKP    Z
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1999-10-17
  GRA1 07:55:12.1 e PKP    Z
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1999-10-17      D 84.4
  GRA1 21:22:46.1 i P      c Z T1.4  A76    mb5.7
  GRA1 22:04:00.6 e L      Z T20.4 A832 MS5.1
SZGRF: OT 21:10:17.7 30N 131E dep 33km
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## RYUKYU ISLANDS

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1999-10-18 D 81.1 AZ 34  
GRA1 00:37:12.3 e P Z T1.2 A7 mb4.6  
SZGRF: OT 00:25:01.6 41N 145E dep 33km  
OFF EAST COAST OF HONSHU, JAPAN  
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1999-10-18  
GRA1 01:15:35.3 e PKP Z  
GRA1 01:15:57.4 e Z  
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1999-10-18 D 54.6 AZ 68  
GRA1 02:51:35.0 e P Z T1.4 A20 mb4.9  
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1999-10-18 D110.2  
GRA1 02:58:00.2 e Pdiff Z  
GRA1 03:02:33.9 e PP Z  
GRA1 03:08:26.1 e SKSac N  
GRA1 03:11:57.6 e SP N  
GRA1 03:18:03.9 e SS N  
GRA1 03:44:41.3 e L Z T21.9 A5776 MS6.1  
NEIC: OT 02:43:24.3 56S 27W dep 33km mb6.1  
SOUTH SANDWICH ISLANDS REGION  
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1999-10-18 D 85.5 AZ 59  
GRA1 15:44:00.1 e P Z T1.0 A15 mb5.2  
SZGRF: OT 15:31:26.4 23N 123E dep 33km  
TAIWAN REGION  
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1999-10-18 D 85.1 AZ 59  
GRA1 16:13:16.4 e P Z T1.9 A43 mb5.4  
SZGRF: OT 16:00:44.7 23N 122E dep 33km  
TAIWAN REGION  
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1999-10-19  
GRA1 08:44:26.4 e PKP Z  
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1999-10-19 D 83.6  
GRA1 13:28:45.3 e P Z T1.5 A56 mb5.6  
SZGRF: OT 13:16:21.4 37N 142E dep 33km  
NEAR EAST COAST OF HONSHU, JAPAN  
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1999-10-20  
GRC2 08:47:09.4 e PKP Z  
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1999-10-20 D 67.7  
 GRA1 11:18:36.8 e P Z  
 NEIC: OT 11:06:53.6 52N 162E dep 33km mb4.5  
 OFF EAST COAST OF KAMCHATKA

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 1999-10-20 D 14.9  
 GRA1 23:11:55.5 e P Z T1.4 A54  
 GRA1 23:18:30.0 e L Z T21.9 A3282 MS4.4  
 SZGRF: OT 23:08:27.1 42N 29E dep 33km  
 TURKEY

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 1999-10-21 D 87.4  
 GRB5 00:11:42.7 e P Z  
 GRA1 00:11:43.0 e P Z

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 1999-10-22  
 GRA1 01:09:45.4 e P Z

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 1999-10-22 D 80.4  
 GRA1 02:31:27.6 e P Z T1.3 A97 mb5.6  
 GRA1 02:31:34.8 e pP Z  
 GRA1 03:12:06.1 e L E T19.2 A8707 MS6.1  
 NEIC: OT 02:18:58.4 23N 120E dep 33km mb5.6  
 TAIWAN

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 1999-10-22 D 84.4 AZ 61  
 GRA1 03:22:48.1 e P Z  
 GRA1 03:22:59.6 e pP Z  
 GRA1 03:23:07.3 e sP Z  
 SZGRF: OT 03:10:19.8 23N 121E dep 43km  
 TAIWAN

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 1999-10-23 D 16.4  
 GRA1 02:08:32.8 e P Z T1.2 A130 mb4.9  
 GRA1 02:10:35.6 e S N  
 NEIC: OT 02:04:37.6 41N 29E dep 17km  
 TURKEY

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 1999-10-23 D 18.6  
 GRA1 02:28:31.4 e P Z T1.0 A50 mb4.7  
 SZGRF: OT 02:24:16.7 35N 26E dep 33km  
 CRETE

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 1999-10-23 D125.2  
 GRA1 02:30:58.7 e PKPdf Z  
 GRA1 02:49:46.2 e SS N  
 GRA1 03:18:04.9 e L E T23.4 A2047 MS5.7

NEIC: OT 02:12:04.7 5S 153E dep 85km mb5.7  
NEW IRELAND REGION, P.N.G.

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1999-10-23

GRB5 17:20:33.6 e P Z  
GRA1 17:20:34.8 e P Z

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1999-10-24 D 17.6

GRA1 01:26:31.9 e P Z T0.8 A21 mb4.3  
SZGRF: OT 01:22:29.4 36N 27E dep 33km  
DODECANESE ISLANDS

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1999-10-24 D 77.4

GRA1 04:33:44.6 i P c Z T1.0 A490 mb6.6  
GRA1 04:34:00.7 e sP Z  
GRA1 04:43:46.7 e S E  
GRA1 04:49:26.6 e SS N  
GRA1 05:12:54.8 e L Z T18.2 A5325 MS5.9  
SZGRF: OT 04:21:54.4 46N 148E dep 39km  
NORTHWEST OF KURIL ISLANDS

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1999-10-24 D 79.0 AZ 26

GRA1 12:26:01.8 e P Z T1.0 A47 mb5.5  
SZGRF: OT 12:14:02.7 46N 152E dep 33km  
KURIL ISLANDS REGION

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1999-10-24 D 74.3

GRA1 12:36:28.4 i P Z T1.4 A68 mb5.5  
GRA1 13:10:39.6 e L Z T23.1 A447 MS4.7  
SZGRF: OT 12:24:56.0 53N 159E dep 33km  
OFF EAST COAST OF KAMCHATKA

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1999-10-24 D 78.6 AZ 25

GRA1 13:01:27.6 e P Z T0.9 A48 mb5.5  
GRA1 13:01:39.1 e pP Z  
GRA1 13:01:45.2 e sP Z  
SZGRF: OT 12:49:30.7 47N 154E dep 42km  
KURIL ISLANDS

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1999-10-24

GRB5 20:55:54.3 e PKP Z

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1999-10-25 D149.6

GRA1 00:21:04.4 e PKPdf Z  
GRA1 00:21:08.9 e PKPbc Z  
GRA1 00:28:05.1 e SKSdf Z  
GRA1 00:43:41.5 e SS E

GRA1 01:28:51.9 e L Z T20.6 A1348 MS5.7  
 NEIC: OT 00:01:20.2 19S 174W dep 33km mb5.5  
 TONGA ISLANDS

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 1999-10-25 D 86.8 AZ 39  
 GRA1 07:42:44.0 e P Z T1.4 A75 mb5.6  
 GRA1 07:53:11.6 e S E  
 GRA1 08:27:10.5 e L Z T18.0 A2425 MS5.6  
 SZGRF: OT 07:30:04.2 33N 143E dep 33km  
 OFF EAST COAST OF HONSHU, JAPAN

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 1999-10-25 D164.3  
 GRA1 20:51:25.9 e PKPdf Z  
 GRA1 20:52:23.4 e PKPab Z  
 GRA1 20:56:09.6 e PP Z  
 NEIC: OT 20:31:40.8 39S 176E dep138km mb5.6  
 NORTH ISLAND, NEW ZEALAND

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 1999-10-25 D 2.9 319km  
 GRC1 18:38:56.4 e Sg E M13.0  
 GRA1 18:39:22.9 e Sg E M13.4  
 SZGRF: OT 18:37:27.3 46N 13E dep 10km  
 AUSTRIA

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 1999-10-26 D 75.0  
 GRA1 05:31:25.0 e P Z T2.0 A72 mb5.4  
 SZGRF: OT 05:19:48.8 55N 160W dep 33km  
 ALASKA PENINSULA

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 1999-10-26 D 4.3 480km  
 GRC1 07:20:57.6 e Sg N  
 GRA1 07:21:21.8 e Sg N  
 NEIC: OT 07:18:41.3 45N 11E dep 10km  
 NORTHERN ITALY

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 1999-10-27  
 GRA1 04:28:40.4 e PKP Z  
 GRA1 04:28:43.6 e Z

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 1999-10-27 D 16.4  
 GRA1 04:48:13.3 e (P) Z T21.9 A359  
 GRA1 05:15:31.2 e L Z T22.0 A909 MS3.9  
 SZGRF: OT 04:44:25.5 50N 14W dep 33km  
 NORTH ATLANTIC OCEAN

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 1999-10-27 D 44.5  
 GRA1 05:13:30.5 e P Z T1.1 A28 mb4.9  
 NEIC: OT 05:05:07.0 79N 124E dep 10km mb4.9

EAST OF SEVERNAYA Z EMLYA,

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1999-10-27 D 86.2

GRA1 13:41:01.9 e P Z

SZGRF: OT 13:28:24.9 33N 140E dep 33km

SOUTH OF HONSHU, JAPAN  
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1999-10-27 D 81.0

GRA1 21:24:29.5 e P Z T1.1 A13 mb4.9

SZGRF: OT 21:12:19.8 50N 175W dep 33km

ALEUTIAN ISLANDS REGION  
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1999-10-28 D 3.7 411km

GRB1 03:16:53.5 e Pn Z

GRA1 03:16:53.8 e Pn Z M14.4

GRA1 03:17:54.0 e Sg N

SZGRF: OT 03:15:55.1 52N 16E dep 1km

POLAND  
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1999-10-28 D 2.0 226km

GRC1 04:55:01.4 e Pg Z M13.3

GRA1 04:55:03.9 e Pn Z M13.5

GRA1 04:55:10.7 e Pg Z

GRA1 04:55:47.9 e Sg N

SZGRF: OT 04:54:23.8 47N 10E dep 10km

ENE of Feldkirch/A, Klein Walsertal, S Allgaeuer Alps  
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1999-10-28 D 82.2

GRA1 07:11:00.7 e P Z T1.1 A30 mb5.3

GRA1 07:11:12.4 e Z

SZGRF: OT 06:58:44.1 40N 145E dep 33km

OFF EAST COAST OF HONSHU, JAPAN  
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1999-10-29 D 78.4

GRA1 13:57:58.6 e P Z  
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1999-10-29 D 17.9

GRA1 15:26:35.1 e P Z  
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1999-10-29 D151.6

GRA1 15:44:44.6 e PKPdf Z

GRA1 15:44:50.9 e PKPbc Z

GRA1 15:44:57.5 e PKPab Z

GRA1 15:45:58.6 e (pPKPbc) Z  
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1999-10-30 D 85.1 AZ 40

GRA1 01:01:12.9 i P d Z mb5.2  
 ALIGN 01:01:12.9 T1.2 A18  
 GRA1 01:01:23.7 e Z  
 GRA1 01:01:30.9 e Z  
 GRA1 01:01:40.7 e (pP) Z  
 GRA1 01:44:14.7 e L Z T18.0 A557 MS5.0

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 1999-10-30 D 13.4

GRA1 07:12:29.3 e Pn Z  
 GRA1 07:18:51.9 e L Z T19.7 A255 MS3.3

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 1999-10-30 D 84.4 AZ 59

GRA1 08:40:26.1 e P Z mb4.8  
 BEAM 08:40:26.1 T1.3 A9  
 GRA1 08:40:34.7 e pP Z  
 GRA1 09:22:33.8 e L Z T18.8 A301 MS4.7  
 NEIC: OT 08:27:53.6 24N 122E dep 33km mb5.2  
 TAIWAN

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 1999-10-30

GRA1 09:12:47.2 e (PKPab) Z

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 1999-10-30 D145.9

GRA1 10:02:59.8 e PKPdf Z  
 GRA1 10:03:22.2 e pPKPdf Z  
 GRA1 10:56:13.2 e L Z T20.9 A176 MS4.8

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 1999-10-30 D 83.6 AZ 58

GRA1 13:13:41.6 e P Z mb4.7  
 BEAM 13:13:41.6 T0.9 A4  
 NEIC: OT 13:01:06.3 24N 121E dep 33km mb4.9  
 TAIWAN

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 1999-10-30 D161.6

GRA1 21:36:37.6 e PKPdf Z  
 GRA1 21:37:24.4 e PKPab Z  
 GRA1 21:37:38.9 e pPKPab Z  
 GRA1 22:54:07.7 e L Z T20.8 A399 MS5.2

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 1999-10-31 D 43.9

GRA1 10:11:40.3 e P Z

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 1999-10-31 D 3.5 392km

GRC1 12:04:51.5 e Pn Z M13.8  
GRA1 12:05:00.5 e Pn Z M14.1  
GRA1 12:06:11.4 e Sg N  
SZGRF: OT 12:03:57.7 46N 10E dep 10km  
NORTHERN ITALY

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1999-10-31 D150.8  
GRA1 14:32:28.1 e PKPdf Z  
GRA1 14:32:37.6 e pPKPdf Z

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1999-10-31 D 36.8 AZ108  
GRA1 15:16:46.2 e P Z T1.0 A27 mb4.9  
GRA1 15:16:57.6 e pP Z  
GRA1 15:17:02.6 e (sP) Z  
GRA1 15:37:25.5 e L Z T19.9 A353 MS4.1

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1999-10-31 D 40.2 AZ 83  
GRA1 17:16:47.0 i P c Z mb5.1  
ALIGN 17:16:47.0 T1.5 A66  
GRA1 17:18:19.0 e Z  
GRA1 17:18:50.8 e Z  
GRA1 17:34:14.7 e L Z T20.9 A373 MS4.2  
NEIC: OT 17:09:10.8 39N 66E dep 33km mb5.2  
SOUTHEASTERN UZBEKISTAN

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1999-10-31 D100.7  
GRA1 19:58:12.7 e Pdiff Z

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