

| Date              | Origin Time       | OT_err   | Lat            | Long          | Smajor | Sminor | Az  | Depth      | D_err   | Ndef     | Nsta     | Gap        | Mag          | Ref        | Source     | Ev_type  |
|-------------------|-------------------|----------|----------------|---------------|--------|--------|-----|------------|---------|----------|----------|------------|--------------|------------|------------|----------|
| 1998/07/05        | 03:14:00.0        | + - 0.70 | 49.838N        | 8.237E        | 16.0   | 10.4   | 121 | 2          | + - 0.0 | 11       |          | 336        | 2.4ML        |            | LDG        | L        |
| 1998/07/05        | 03:13:59.7        |          | 49.740N        | 8.550E        |        |        |     | 2          |         |          |          |            | 2.0ML        |            | STR        |          |
| <b>1998/07/05</b> | <b>03:13:59.8</b> |          | <b>49.760N</b> | <b>8.530E</b> |        |        |     | <b>10G</b> |         | <b>9</b> | <b>6</b> | <b>120</b> | <b>1.6ML</b> | <b>BFO</b> | <b>BGR</b> | <b>L</b> |

## Worms

| Sta  | Phase | Time         | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|------|-------|--------------|------|-----|-----|-------|-------|--------|
| TNS  | e Pg  | Z 03:14:08.9 | 0.1  | T   | 4.5 | 51.8  | 353.5 | ML 1.6 |
|      | e Sg  | E 03:14:15.4 | 0.5  | T   |     |       |       |        |
| BFO  | e Pg  | Z 03:14:27.3 | 0.4  | T   | 5.3 | 159.7 | 185.3 | ML 1.6 |
|      | e Sg  | E 03:14:45.5 | -0.0 | T   |     |       |       |        |
| GSH  | e Sg  | N 03:14:52.7 | -0.8 | T   |     | 187.7 | 306.2 | ML 1.9 |
| GRFO | e Pg  | Z 03:14:33.9 | 1.2  | T   | 1.9 | 193.5 | 91.3  | ML 1.8 |
|      | e Sg  | E 03:14:54.8 | -0.4 | T   |     |       |       |        |
| MOX  | e Sg  | N 03:15:08.3 | -0.4 | T   |     | 240.6 | 64.7  | ML 1.8 |
| FUR  | e Sg  | E 03:15:16.3 | -0.1 | T   |     | 267.7 | 130.5 | ML 2.4 |

| Date              | Origin Time       | OT_err | Lat            | Long          | Smajor | Sminor | Az | Depth    | D_err | Ndef      | Nsta      | Gap        | Mag          | Ref | Source     | Ev_type |
|-------------------|-------------------|--------|----------------|---------------|--------|--------|----|----------|-------|-----------|-----------|------------|--------------|-----|------------|---------|
| 1998/07/06        | 08:13:38.5        |        | 47.159N        | 9.436E        |        |        |    | 10G      |       |           | 10        |            | 2.4ML        | VIE | NEIC       |         |
| <b>1998/07/06</b> | <b>08:13:37.2</b> |        | <b>47.214N</b> | <b>9.507E</b> |        |        |    | <b>5</b> |       | <b>20</b> | <b>14</b> | <b>191</b> | <b>2.0ML</b> |     | <b>SED</b> |         |

## Feldkirch/A, Swiss-Liechtenstein-Austrian border region

| Sta | Phase | Time         | TRes | Def | S/N | Dist  | EvAz  | Mag |
|-----|-------|--------------|------|-----|-----|-------|-------|-----|
| BFO | e Pg  | Z 08:14:03.2 | 0.2  |     | 2.1 | 152.1 | 325.1 |     |
|     | e Sg  | E 08:14:19.4 | -1.3 |     |     |       |       |     |

| Date              | Origin Time       | OT_err          | Lat            | Long          | Smajor      | Sminor     | Az        | Depth     | D_err | Ndef     | Nsta     | Gap        | Mag          | Ref        | Source     | Ev_type   |
|-------------------|-------------------|-----------------|----------------|---------------|-------------|------------|-----------|-----------|-------|----------|----------|------------|--------------|------------|------------|-----------|
| 1998/07/07        | 14:51:25.7        |                 | 50.050N        | 7.570E        |             |            |           | 2G        |       |          |          |            | 2.1ML        |            | STR        |           |
|                   |                   |                 |                |               |             |            |           |           |       |          |          |            | ML= 1.8(UCC) |            |            |           |
| <b>1998/07/07</b> | <b>14:51:27.9</b> | <b>+ - 0.45</b> | <b>49.970N</b> | <b>7.660E</b> | <b>11.1</b> | <b>4.4</b> | <b>58</b> | <b>0G</b> |       | <b>5</b> | <b>3</b> | <b>148</b> | <b>1.9ML</b> | <b>GSH</b> | <b>BGR</b> | <b>B?</b> |

## Simmern/Hunsrueck

| Sta | Phase | Time         | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|-----|-------|--------------|------|-----|-----|-------|-------|--------|
| TNS | e Pg  | Z 14:51:38.6 | 0.1  | T   | 4.0 | 62.8  | 63.1  | ML 1.5 |
| GSH | e Pg  | Z 14:51:48.8 | -0.3 | T   | 4.1 | 124.7 | 313.6 | ML 1.9 |
|     | e Sg  | E 14:52:03.9 | 0.4  | T   |     |       |       |        |
| BFO | e Pg  | Z 14:51:59.5 | -0.3 | T   | 2.0 | 188.7 | 164.8 | ML 1.7 |
|     | e Sg  | E 14:52:22.0 | 0.2  | T   |     |       |       |        |

| Date              | Origin Time       | OT_err          | Lat            | Long          | Smajor      | Sminor     | Az        | Depth     | D_err | Ndef     | Nsta     | Gap        | Mag          | Ref        | Source     | Ev_type  |
|-------------------|-------------------|-----------------|----------------|---------------|-------------|------------|-----------|-----------|-------|----------|----------|------------|--------------|------------|------------|----------|
| 1998/07/08        | 09:53:17.8        |                 | 49.110N        | 6.740E        |             |            |           | 1         |       |          |          |            | 2.0ML        |            | STR        |          |
| <b>1998/07/08</b> | <b>09:53:18.9</b> | <b>+ - 0.98</b> | <b>49.130N</b> | <b>6.870E</b> | <b>16.7</b> | <b>5.6</b> | <b>68</b> | <b>0G</b> |       | <b>5</b> | <b>3</b> | <b>219</b> | <b>1.9ML</b> | <b>TNS</b> | <b>BGR</b> | <b>I</b> |

Merlebach/F, SW of Saarbruecken, French-German border region

| Sta | Phase  | Time       | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|-----|--------|------------|------|-----|-----|-------|-------|--------|
| BFO | e Pg Z | 09:53:42.0 | -0.4 | T   | 3.4 | 139.2 | 129.2 | ML 1.6 |
|     | e Sg E | 09:53:58.7 | 0.1  | T   |     |       |       |        |
| TNS | e Pg Z | 09:53:48.6 | 1.6  | T   | 1.6 | 166.2 | 42.5  | ML 1.9 |
|     | e Sg N | 09:54:05.7 | -0.6 | T   |     |       |       |        |
| GSH | e Sg E | 09:54:10.4 | -0.5 | T   |     | 182.1 | 349.0 |        |

| Date       | Origin Time | OT_err   | Lat     | Long   | Smajor | Sminor | Az | Depth | D_err | Ndef | Nsta | Gap | Mag   | Ref | Source | Ev_type |
|------------|-------------|----------|---------|--------|--------|--------|----|-------|-------|------|------|-----|-------|-----|--------|---------|
| 1998/07/08 | 10:13:30.4  | + - 0.48 | 49.510N | 6.650E | 5.6    | 3.3    | 33 | 1G    |       | 8    | 5    | 159 | 2.1ML | TNS | BGR    | I?      |

Merzig, NW of Saarbruecken, Luxembourg-French-German border

| Sta | Phase  | Time       | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|-----|--------|------------|------|-----|-----|-------|-------|--------|
| WLF | e Pg Z | 10:13:37.3 | 0.1  | T   | 5.2 | 39.8  | 295.8 |        |
|     | e Sg N | 10:13:41.7 | -0.1 | T   |     |       |       |        |
| GSH | e Pg Z | 10:13:53.5 | -0.2 | T   | 3.5 | 137.8 | 352.0 | ML 1.9 |
|     | e Sg E | 10:14:09.5 | -0.3 | T   |     |       |       |        |
| TNS | e Pg Z | 10:13:56.7 | 0.7  | T   | 9.2 | 151.2 | 57.7  | ML 2.1 |
|     | e Sg N | 10:14:13.7 | 0.1  | T   |     |       |       |        |
| BFO | e Sg E | 10:14:21.7 | -0.0 | T   |     | 179.6 | 136.3 | ML 1.8 |
| BUG | e Sg N | 10:14:32.9 | -0.0 | T   |     | 219.1 | 11.3  | ML 2.3 |

| Date              | Origin Time       | OT_err   | Lat            | Long          | Smajor | Sminor | Az  | Depth     | D_err | Ndef | Nsta | Gap | Mag          | Ref | Source     | Ev_type  |
|-------------------|-------------------|----------|----------------|---------------|--------|--------|-----|-----------|-------|------|------|-----|--------------|-----|------------|----------|
| 1998/07/09        | 14:47:09.3        | + - 0.31 | 51.620N        | 7.760E        | 3.3    | 3.3    | 143 | 1G        |       | 13   | 7    | 120 | 2.0ML        | TNS | BGR        | I        |
| <b>1998/07/09</b> | <b>14:47:07.8</b> |          | <b>51.647N</b> | <b>7.744E</b> |        |        |     | <b>1G</b> |       |      |      |     | <b>1.8ML</b> |     | <b>RUB</b> | <b>I</b> |

Hamm/Westfalen, Ruhr Coal Mining District

| Sta  | Phase    | Time       | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|------|----------|------------|------|-----|-----|-------|-------|--------|
| BUG  | i Pg + Z | 14:47:15.8 | 1.2  | TA  |     | 40.1  | 235.2 | ML 1.8 |
|      | e Sg E   | 14:47:21.1 | 1.9  |     |     |       |       |        |
| IBBN | e Pg Z   | 14:47:22.6 | 2.3  |     | 1.4 | 73.4  | 0.7   | ML 2.0 |
|      | e Sg N   | 14:47:31.0 | 2.3  |     |     |       |       |        |
| GSH  | e Pg Z   | 14:47:33.1 | 1.8  |     | 1.6 | 139.0 | 223.8 | ML 2.0 |
|      | e Sg N   | 14:47:49.1 | 1.6  |     |     |       |       |        |
| TNS  | e Pg Z   | 14:47:36.9 | 1.0  |     | 1.6 | 165.9 | 162.4 | ML 2.0 |
|      | e Sg E   | 14:47:55.6 | 0.4  |     |     |       |       |        |
| CLZ  | e Pg Z   | 14:47:39.1 | 0.4  |     | 3.2 | 182.3 | 82.2  | ML 2.1 |
|      | e Sg N   | 14:48:01.7 | 1.8  |     |     |       |       |        |

|     |   |    |   |            |      |  |  |  |  |  |  |  |       |       |       |
|-----|---|----|---|------------|------|--|--|--|--|--|--|--|-------|-------|-------|
| WLF | e | Sg | N | 14:48:18.4 | -0.1 |  |  |  |  |  |  |  | 247.3 | 207.6 |       |
| MOX | e | Pg | Z | 14:47:59.2 | 1.9  |  |  |  |  |  |  |  | 1.7   | 292.1 | 110.9 |
|     | e | Sg | N | 14:48:32.6 | 1.3  |  |  |  |  |  |  |  |       |       |       |

| Date       | Origin Time | OT_err   | Lat     | Long   | Smajor | Sminor | Az  | Depth | D_err   | Ndef | Nsta | Gap | Mag   | Ref | Source | Ev_type |
|------------|-------------|----------|---------|--------|--------|--------|-----|-------|---------|------|------|-----|-------|-----|--------|---------|
| 1998/07/09 | 15:26:49.0  | + - 0.53 | 48.493N | 6.884E | 10.8   | 4.1    | 165 | 2     | + - 0.0 | 12   |      | 229 | 2.2ML |     | LDG    | L       |

Baccarat/F, NW Vosges Mountains

| Date       | Origin Time | OT_err   | Lat     | Long   | Smajor | Sminor | Az  | Depth | D_err   | Ndef | Nsta | Gap | Mag   | Ref | Source | Ev_type |
|------------|-------------|----------|---------|--------|--------|--------|-----|-------|---------|------|------|-----|-------|-----|--------|---------|
| 1998/07/09 | 19:05:12.8  | + - 1.08 | 48.827N | 5.779E | 18.2   | 10.6   | 124 | 2     | + - 0.0 | 7    |      | 298 | 2.1ML |     | LDG    | L       |

Flirey/Meuse/F

| Date       | Origin Time | OT_err   | Lat     | Long   | Smajor | Sminor | Az  | Depth | D_err | Ndef | Nsta | Gap | Mag   | Ref | Source | Ev_type |
|------------|-------------|----------|---------|--------|--------|--------|-----|-------|-------|------|------|-----|-------|-----|--------|---------|
| 1998/07/10 | 04:14:48.0  | + - 1.53 | 51.760N | 7.680E | 35.6   | 4.4    | 152 | 1G    |       | 6    | 3    | 227 | 2.0ML |     | SZGRF  | I       |
| 1998/07/10 | 04:14:47.0  |          | 51.647N | 7.744E |        |        |     | 1G    |       |      |      |     | 1.7ML |     | RUB    | I       |

Hamm/Westfalen, Ruhr Coal Mining District

| Sta | Phase    | Time       | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|-----|----------|------------|------|-----|-----|-------|-------|--------|
| BUG | i Pg - Z | 04:14:55.0 | 1.2  | TA  |     | 40.1  | 235.2 | ML 1.7 |
|     | e Sg N   | 04:15:01.0 | 2.5  |     |     |       |       |        |
| GSH | e Pg Z   | 04:15:11.6 | 1.0  |     |     | 139.0 | 223.8 | ML 1.9 |
|     | e Sg E   | 04:15:30.0 | 3.3  |     |     |       |       |        |
| CLZ | e Pg Z   | 04:15:18.3 | 0.4  |     |     | 182.3 | 82.2  | ML 2.0 |
|     | e Sg N   | 04:15:40.9 | 1.8  |     |     |       |       |        |

| Date       | Origin Time | OT_err   | Lat     | Long   | Smajor | Sminor | Az  | Depth | D_err   | Ndef | Nsta | Gap | Mag   | Ref | Source | Ev_type |
|------------|-------------|----------|---------|--------|--------|--------|-----|-------|---------|------|------|-----|-------|-----|--------|---------|
| 1998/07/10 | 14:55:31.0  | + - 0.16 | 47.177N | 6.042E | 3.2    | 2.7    | 124 | 2     | + - 0.0 | 23   |      | 122 | 2.2ML |     | LDG    | L       |

SE of Besancon/F

| Date       | Origin Time | OT_err   | Lat     | Long   | Smajor | Sminor | Az  | Depth | D_err | Ndef | Nsta | Gap | Mag   | Ref | Source | Ev_type |
|------------|-------------|----------|---------|--------|--------|--------|-----|-------|-------|------|------|-----|-------|-----|--------|---------|
| 1998/07/11 | 08:48:23.0  | + - 0.31 | 51.640N | 7.770E | 5.6    | 4.4    | 142 | 1G    |       | 13   | 6    | 121 | 2.2ML | BUG | BGR    | I       |
| 1998/07/11 | 08:48:23.4  |          | 51.627N | 7.696E |        |        |     | 1G    |       |      |      |     | 2.1ML |     | RUB    | I       |

Hamm/Westfalen, Ruhr Coal Mining District

| Sta  | Phase    | Time       | TRes | Def | S/N  | Dist  | EvAz  | Mag    |
|------|----------|------------|------|-----|------|-------|-------|--------|
| BUG  | e Pg + Z | 08:48:30.6 | 1.1  | TA  |      | 36.1  | 235.1 | ML 2.1 |
|      | e Sg E   | 08:48:35.4 | 1.6  |     |      |       |       |        |
| IBBN | e Pg Z   | 08:48:36.6 | 0.4  |     | 4.8  | 75.8  | 3.1   | ML 2.4 |
|      | e Sg E   | 08:48:43.1 | -2.0 |     |      |       |       |        |
| GSH  | e Pg Z   | 08:48:46.9 | 0.6  |     | 4.9  | 135.0 | 223.4 | ML 2.3 |
|      | e Sg E   | 08:49:03.8 | 1.8  |     |      |       |       |        |
| TNS  | e Pn -   | 08:48:49.7 | -0.7 |     | 5.7  | 164.8 | 161.1 | ML 2.3 |
|      | e Pg Z   | 08:48:51.2 | -0.1 |     |      |       |       |        |
|      | e Sn N   | 08:49:05.1 | -4.5 |     |      |       |       |        |
| CLZ  | e Sg N   | 08:49:10.8 | 0.3  |     | 11.1 | 185.8 | 81.6  | ML 2.4 |
|      | e Pg Z   | 08:48:53.1 | -1.8 |     |      |       |       |        |
| WLF  | e Sg E   | 08:49:15.6 | -0.9 |     |      | 243.8 | 207.1 |        |
|      | e Sg E   | 08:49:24.2 | -8.9 |     |      |       |       |        |
| MOX  | e Pn Z   | 08:49:05.3 | -1.0 |     |      | 294.4 | 110.2 | ML 2.4 |
|      | i Pg     | 08:49:13.3 | 0.0  |     |      |       |       |        |
|      | e Sg N   | 08:49:46.5 | -1.0 |     |      |       |       |        |

| Date       | Origin Time | OT_err  | Lat     | Long   | Smajor | Sminor | Az  | Depth | D_err  | Ndef | Nsta | Gap | Mag   | Ref | Source | Ev_type |
|------------|-------------|---------|---------|--------|--------|--------|-----|-------|--------|------|------|-----|-------|-----|--------|---------|
| 1998/07/13 | 09:54:41.6  | +- 0.21 | 47.165N | 6.068E | 5.0    | 2.9    | 136 | 2     | +- 0.0 | 16   |      | 139 | 2.3ML |     | LDG    | L       |

SE of Besancon/F

| Date       | Origin Time  | OT_err  | Lat     | Long   | Smajor | Sminor | Az | Depth | D_err  | Ndef | Nsta | Gap | Mag   | Ref | Source | Ev_type |
|------------|--------------|---------|---------|--------|--------|--------|----|-------|--------|------|------|-----|-------|-----|--------|---------|
| 1998/07/14 | 01:14:30.6   |         | 49.916N | 7.381E |        |        |    | 10G   |        |      | 20   |     | 2.2ML | STR | NEIC   |         |
|            | ML= 2.2(UCC) |         |         |        |        |        |    |       |        |      |      |     |       |     |        |         |
| 1998/07/14 | 01:14:31.4   | +- 0.41 | 49.926N | 7.367E | 7.5    | 4.6    | 56 | 2     | +- 0.0 | 20   |      | 267 | 2.6ML |     | LDG    | L       |
| 1998/07/14 | 01:14:30.3   |         | 49.970N | 7.470E |        |        |    | 10G   |        | 6    | 4    | 157 | 2.0ML | TNS | BGR    | L       |

Simmern/Hunsrueck

| Sta  | Phase  | Time       | TRes | Def | S/N  | Dist  | EvAz  | Mag    |
|------|--------|------------|------|-----|------|-------|-------|--------|
| TNS  | e Pg Z | 01:14:43.0 | -0.1 | T   | 17.7 | 75.1  | 67.7  | ML 2.0 |
| GSH  | e Pg Z | 01:14:50.3 | 0.4  | T   | 3.5  | 115.3 | 318.1 | ML 1.9 |
|      | e Sg E | 01:15:03.1 | -0.3 | T   |      |       |       |        |
| BFO  | e Pg Z | 01:15:03.1 | 0.0  | T   | 2.3  | 192.8 | 160.8 |        |
|      | e Sg N | 01:15:25.1 | -0.3 | T   |      |       |       |        |
| GRFO | e Sg E | 01:15:47.8 | 0.1  | T   |      | 270.7 | 95.1  |        |

| Date       | Origin Time                          | OT_err  | Lat     | Long    | Smajor | Sminor | Az  | Depth | D_err | Ndef | Nsta | Gap | Mag   | Ref | Source | Ev_type |
|------------|--------------------------------------|---------|---------|---------|--------|--------|-----|-------|-------|------|------|-----|-------|-----|--------|---------|
| 1998/07/14 | 10:17:23.1                           |         | 48.783N | 10.108E |        |        |     | 10G   |       |      | 6    |     | 2.6ML | VIE | NEIC   |         |
|            | ML= 2.6(STR), Less reliable solution |         |         |         |        |        |     |       |       |      |      |     |       |     |        |         |
| 1998/07/14 | 10:17:22.2                           | +- 0.40 | 48.780N | 10.170E | 6.7    | 4.4    | 155 | 0G    |       | 8    | 6    | 135 | 2.2ML | BFO | BGR    | B       |

Heidenheim/Swabian Jura

| Sta  | Phase |   | Time       | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|------|-------|---|------------|------|-----|-----|-------|-------|--------|
| FUR  | e Sg  | N | 10:17:53.7 | 1.1  | T   |     | 106.5 | 129.7 | ML 2.4 |
| GRFO | e Pg  | Z | 10:17:43.9 | 0.2  | T   | 5.6 | 126.8 | 36.6  | ML 2.2 |
|      | e Sg  | N | 10:18:00.0 | 1.6  | T   |     |       |       |        |
| BFO  | e Pg  | Z | 10:17:46.2 | -0.5 | T   | 5.9 | 144.4 | 250.4 | ML 2.2 |
|      | e Sg  | E | 10:18:03.8 | 0.3  | T   |     |       |       |        |
| WET  | e Sg  | Z | 10:18:19.2 | -0.7 | T   |     | 201.8 | 77.4  | ML 2.3 |
| MOX  | e Sg  | N | 10:18:27.9 | -0.6 | T   |     | 231.9 | 26.1  | ML 2.2 |
| GEC2 | e Sg  | N | 10:18:35.3 | -0.8 | T   |     | 258.7 | 87.1  | ML 2.1 |

| Date              | Origin Time       | OT_err   | Lat            | Long          | Smajor | Sminor | Az | Depth     | D_err   | Ndef      | Nsta     | Gap        | Mag          | Ref        | Source     | Ev_type  |
|-------------------|-------------------|----------|----------------|---------------|--------|--------|----|-----------|---------|-----------|----------|------------|--------------|------------|------------|----------|
| 1998/07/14        | 12:12:02.2        | +/- 0.70 | 52.908N        | 6.857E        | 15.2   | 13.5   | 70 | 2         | +/- 0.0 | 17        |          | 308        | 3.3ML        |            | LDG        | L        |
| <b>1998/07/14</b> | <b>12:12:03.0</b> |          | <b>52.890N</b> | <b>7.010E</b> |        |        |    | <b>5G</b> |         | <b>14</b> | <b>6</b> | <b>285</b> | <b>2.9ML</b> | <b>BUG</b> | <b>BGR</b> | <b>L</b> |

Lathen, N of Meppen, Dutch-German border region

| Sta  | Phase  |   | Time       | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|------|--------|---|------------|------|-----|-----|-------|-------|--------|
| IBBN | e Pg   | Z | 12:12:17.0 | 0.1  | T   | 9.5 | 82.1  | 141.8 | ML 3.2 |
|      | e Sg   | N | 12:12:27.2 | 0.8  | T   |     |       |       |        |
| BUG  | e Pg   | Z | 12:12:29.8 | -0.7 | T   | 4.7 | 162.1 | 173.6 | ML 2.9 |
|      | e Sg   | E | 12:12:49.1 | -0.2 | T   |     |       |       |        |
| GSH  | e Pn   | Z | 12:12:38.5 | -0.6 | T   | 2.0 | 243.3 | 190.6 | ML 2.9 |
|      | e Sn   | E | 12:13:04.9 | -0.1 | T   |     |       |       |        |
|      | e Sg   | E | 12:13:12.5 | -0.0 | T   |     |       |       |        |
| CLZ  | e Pn   | Z | 12:12:40.3 | -0.4 | T   | 2.9 | 256.3 | 115.7 | ML 2.8 |
|      | e Sn   | E | 12:13:07.6 | -0.2 | T   |     |       |       |        |
|      | e Sg   | N | 12:13:16.3 | 0.0  | T   |     |       |       |        |
| TNS  | e Pn   | Z | 12:12:48.7 | 1.1  | T   | 2.6 | 312.8 | 160.9 | ML 3.3 |
|      | e Pg   | Z | 12:12:56.2 | 0.2  | T   |     |       |       |        |
|      | e Sg   | E | 12:13:31.9 | -0.4 | T   |     |       |       |        |
| WLF  | e Sg   | E | 12:13:47.3 | 0.4  | T   |     | 363.6 | 189.8 |        |
| MOX  | e (Sg) |   | 12:14:06.0 | 7.8  |     |     | 403.3 | 126.4 |        |

| Date              | Origin Time       | OT_err          | Lat            | Long          | Smajor     | Sminor     | Az         | Depth     | D_err | Ndef     | Nsta     | Gap        | Mag          | Ref        | Source     | Ev_type  |
|-------------------|-------------------|-----------------|----------------|---------------|------------|------------|------------|-----------|-------|----------|----------|------------|--------------|------------|------------|----------|
| 1998/07/16        | 15:48:12.6        |                 | 50.300N        | 6.520E        |            |            |            | 1G        |       |          |          |            | 2.6ML        |            | STR        |          |
| <b>1998/07/16</b> | <b>15:48:14.7</b> | <b>+/- 0.37</b> | <b>50.260N</b> | <b>6.640E</b> | <b>5.6</b> | <b>3.3</b> | <b>104</b> | <b>0G</b> |       | <b>9</b> | <b>5</b> | <b>132</b> | <b>2.5ML</b> | <b>TNS</b> | <b>BGR</b> | <b>B</b> |

Pruem/Eifel

| Sta | Phase |   | Time       | TRes | Def | S/N | Dist | EvAz  | Mag    |
|-----|-------|---|------------|------|-----|-----|------|-------|--------|
| GSH | e Pg  | Z | 15:48:23.5 | -0.7 | T   | 1.9 | 56.2 | 340.8 | ML 2.0 |
|     | e Sg  | E | 15:48:30.9 | 0.2  | T   |     |      |       |        |
| WLF | e Pg  | Z | 15:48:27.2 | -0.2 | T   | 4.5 | 74.8 | 208.0 |        |
|     | e Sg  | E | 15:48:36.7 | 0.7  | T   |     |      |       |        |



|      |   |    |   |            |      |   |     |       |       |    |     |
|------|---|----|---|------------|------|---|-----|-------|-------|----|-----|
| LBG  |   | Sg |   | 18:38:03.4 | -1.1 |   |     | 227.5 | 311.9 | ML | 2.2 |
| BFO  | e | Pn | Z | 18:37:35.8 | 1.8  | T | 1.4 | 235.3 | 299.5 | ML | 2.1 |
|      | e | Pg | N | 18:37:39.3 | 0.0  | T | 2.6 |       |       |    |     |
|      | e | Sn | N | 18:38:00.8 | 2.0  | T |     |       |       |    |     |
|      | e | Sg | N | 18:38:06.1 | -0.6 | T | 4.7 |       |       |    |     |
| WET  | e | Pn | Z | 18:37:35.5 | 0.7  | T | 1.3 | 241.8 | 32.3  | ML | 2.1 |
|      | e | Sn | N | 18:38:02.1 | 1.9  | T |     |       |       |    |     |
|      | e | Sg | N | 18:38:07.5 | -1.0 | T | 4.7 |       |       |    |     |
| KIZ  |   | Sg |   | 18:38:10.1 | -0.4 |   |     | 248.6 | 287.7 | ML | 2.5 |
| SIND |   | Pg |   | 18:37:41.9 | -0.1 |   |     | 251.2 | 334.5 | ML | 2.5 |
|      |   | Sg |   | 18:38:11.5 | 0.3  |   |     |       |       |    |     |
| GEC2 | e | Pg | Z | 18:37:42.6 | -0.4 | T | 2.6 | 257.1 | 47.8  | ML | 2.0 |
|      | e | Sn | N | 18:38:07.1 | 3.7  | T |     |       |       |    |     |
|      | e | Sg | N | 18:38:12.8 | -0.2 | T |     |       |       |    |     |
| GRFO | e | Sg | N | 18:38:15.0 | 0.2  | T | 3.0 | 263.8 | 1.9   | ML | 2.2 |

| Date              | Origin            | Time | OT_err | Lat            | Long          | Smajor | Sminor | Az | Depth     | D_err | Ndef | Nsta | Gap | Mag          | Ref | Source     | Ev_type  |
|-------------------|-------------------|------|--------|----------------|---------------|--------|--------|----|-----------|-------|------|------|-----|--------------|-----|------------|----------|
| 1998/07/17        | 22:23:33.1        |      |        | 51.482N        | 7.719E        |        |        |    | 5G        |       |      | 8    |     | 2.7ML        | STR | NEIC       |          |
| 1998/07/17        | 22:23:33.7        |      |        | 51.590N        | 7.810E        |        |        |    | 1G        |       | 10   | 5    | 193 | 2.5ML        |     | SZGRF      | I        |
| 1998/07/17        | 22:23:33.5        |      |        | 51.630N        | 7.810E        |        |        |    | 1G        |       | 6    | 5    | 116 | 2.4ML        | TNS | BGR        | I        |
| <b>1998/07/17</b> | <b>22:23:31.8</b> |      |        | <b>51.647N</b> | <b>7.744E</b> |        |        |    | <b>1G</b> |       |      |      |     | <b>2.4ML</b> |     | <b>RUB</b> | <b>I</b> |

## Hamm/Westfalen, Ruhr Coal Mining District

| Sta  | Phase    | Time       | TRes | Def | S/N  | Dist  | EvAz  | Mag    |
|------|----------|------------|------|-----|------|-------|-------|--------|
| BUG  | i Pg - Z | 22:23:39.8 | 1.2  | TA  |      | 40.1  | 235.2 | ML 2.4 |
|      | e Sg N   | 22:23:45.7 | 2.5  |     | 9.3  |       |       |        |
| IBBN | e Pg Z   | 22:23:46.4 | 2.2  |     | 4.2  | 73.4  | 0.7   | ML 2.5 |
| GSH  | e Pn Z   | 22:23:56.9 | 1.2  |     | 5.1  | 139.0 | 223.8 | ML 2.6 |
|      | e Pg Z   | 22:23:58.2 | 2.9  |     | 10.5 |       |       |        |
|      | e Sg E   | 22:24:14.0 | 2.5  |     | 4.3  |       |       |        |
| TNS  | e Pn Z   | 22:23:59.4 | 0.5  |     | 3.4  | 165.9 | 162.4 | ML 2.4 |
|      | e Pg Z   | 22:24:00.9 | 1.0  |     | 12.6 |       |       |        |
|      | e Sg Z   | 22:24:19.1 | -0.1 |     | 1.6  |       |       |        |
| CLZ  | e Pn Z   | 22:24:03.0 | 2.0  |     | 4.0  | 182.3 | 82.2  | ML 2.5 |
|      | e Pg Z   | 22:24:03.8 | 1.1  |     | 12.2 |       |       |        |
|      | e Sg E   | 22:24:24.9 | 1.0  |     | 2.7  |       |       |        |
| MOX  | e Pn Z   | 22:24:16.0 | 1.7  |     | 5.2  | 292.1 | 110.9 | ML 2.6 |
|      | e Pg     | 22:24:23.1 | 1.8  |     |      |       |       |        |
|      | e Sg E   | 22:24:55.6 | 0.4  |     |      |       |       |        |
| CLL  | i Pg     | 22:24:34.8 | 1.0  |     |      | 366.1 | 93.9  |        |
|      | e (Sg)   | 22:25:21.0 | 4.6  |     |      |       |       |        |
| BFO  | e Pn Z   | 22:24:24.9 | 0.8  |     | 2.7  | 371.2 | 173.3 |        |

| Date              | Origin            | Time | OT_err | Lat            | Long          | Smajor | Sminor | Az  | Depth     | D_err | Ndef | Nsta | Gap | Mag          | Ref | Source     | Ev_type  |
|-------------------|-------------------|------|--------|----------------|---------------|--------|--------|-----|-----------|-------|------|------|-----|--------------|-----|------------|----------|
| 1998/07/19        | 03:20:50.8        | +-   | 0.54   | 51.610N        | 7.740E        | 8.9    | 4.4    | 159 | 1G        |       | 8    | 4    | 200 | 2.2ML        |     | SZGRF      | I        |
| 1998/07/19        | 03:20:50.1        | +-   | 0.40   | 51.620N        | 7.800E        | 5.6    | 3.3    | 151 | 1G        |       | 9    | 6    | 116 | 2.1ML        | CLZ | BGR        | I        |
| <b>1998/07/19</b> | <b>03:20:48.3</b> |      |        | <b>51.647N</b> | <b>7.744E</b> |        |        |     | <b>1G</b> |       |      |      |     | <b>2.1ML</b> |     | <b>RUB</b> | <b>I</b> |

## Hamm/Westfalen, Ruhr Coal Mining District





| Sta  | Phase    | Time       | TRes | Def | S/N  | Dist  | EvAz  | Mag    |
|------|----------|------------|------|-----|------|-------|-------|--------|
| BUG  | i Pg - Z | 03:20:56.3 | 1.2  | TA  |      | 40.1  | 235.2 | ML 2.1 |
|      | e Sg E   | 03:21:02.0 | 2.3  |     | 12.8 |       |       |        |
| IBBN | e Pg Z   | 03:21:03.1 | 2.4  |     | 4.0  | 73.4  | 0.7   | ML 2.1 |
| GSH  | e Pn Z   | 03:21:14.7 | 2.5  |     |      | 139.0 | 223.8 | ML 2.3 |
|      | e Sg N   | 03:21:30.5 | 2.5  |     | 6.4  |       |       |        |
| TNS  | e Pg Z   | 03:21:17.8 | 1.3  |     | 4.3  | 165.9 | 162.4 | ML 2.0 |
|      | e Sg E   | 03:21:36.4 | 0.7  |     | 2.8  |       |       |        |
| CLZ  | e Pg Z   | 03:21:20.9 | 1.7  |     | 3.6  | 182.3 | 82.2  | ML 2.1 |
|      | e Sg N   | 03:21:41.1 | 0.8  |     | 3.0  |       |       |        |
| BFO  | e Pn Z   | 03:21:42.0 | 1.5  |     |      | 371.2 | 173.3 |        |
| BRG  | e Sg     | 03:23:01.5 | 7.6  |     |      | 439.7 | 98.9  |        |

| Date              | Origin Time                          | OT_err | Lat            | Long           | Smajor     | Sminor     | Az         | Depth     | D_err | Ndef     | Nsta     | Gap        | Mag          | Ref         | Source     | Ev_type   |
|-------------------|--------------------------------------|--------|----------------|----------------|------------|------------|------------|-----------|-------|----------|----------|------------|--------------|-------------|------------|-----------|
| 1998/07/20        | 10:16:44.8                           |        | 48.874N        | 10.312E        |            |            |            | 5G        |       |          | 8        |            | 2.3ML        | VIE         | NEIC       |           |
|                   | ML= 2.1(STR), Less reliable solution |        |                |                |            |            |            |           |       |          |          |            |              |             |            |           |
| <b>1998/07/20</b> | <b>10:16:44.9 +- 0.41</b>            |        | <b>48.760N</b> | <b>10.160E</b> | <b>7.8</b> | <b>4.4</b> | <b>149</b> | <b>0G</b> |       | <b>7</b> | <b>5</b> | <b>134</b> | <b>1.8ML</b> | <b>GRFO</b> | <b>BGR</b> | <b>B?</b> |

Heidenheim/Swabian Jura

| Sta  | Phase  | Time       | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|------|--------|------------|------|-----|-----|-------|-------|--------|
| FUR  | e Pg Z | 10:17:03.2 | 0.5  | T   | 2.1 | 105.7 | 128.5 |        |
| GRFO | e Pg N | 10:17:06.4 | -0.3 | T   | 7.1 | 129.0 | 36.2  | ML 1.8 |
|      | e Sg N | 10:17:23.1 | 1.4  | T   | 3.8 |       |       |        |
| BFO  | e Pg Z | 10:17:09.1 | -0.0 | T   | 3.9 | 143.0 | 251.2 |        |
|      | e Sg N | 10:17:25.7 | -0.1 | T   | 6.1 |       |       |        |
| MOX  | e Sg E | 10:17:51.5 | -0.3 | T   | 1.7 | 234.2 | 26.0  | ML 1.8 |
| GEC2 | e Sg N | 10:17:58.8 | -0.2 | T   | 3.1 | 259.5 | 86.6  | ML 1.9 |

| Date              | Origin Time        | OT_err | Lat            | Long          | Smajor | Sminor | Az  | Depth     | D_err | Ndef | Nsta | Gap | Mag          | Ref | Source     | Ev_type  |
|-------------------|--------------------|--------|----------------|---------------|--------|--------|-----|-----------|-------|------|------|-----|--------------|-----|------------|----------|
| 1998/07/21        | 12:48:27.2 +- 0.77 |        | 51.400N        | 6.530E        | 10.0   | 4.4    | 122 | 1G        |       | 8    | 6    | 211 | 2.1ML        | BUG | BGR        | I        |
| <b>1998/07/21</b> | <b>12:48:24.3</b>  |        | <b>51.465N</b> | <b>6.432E</b> |        |        |     | <b>1G</b> |       |      |      |     | <b>2.2ML</b> |     | <b>RUB</b> | <b>I</b> |

Moers, Ruhr Coal Mining District

| Sta  | Phase  | Time       | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|------|--------|------------|------|-----|-----|-------|-------|--------|
| BUG  | e Pg Z | 12:48:36.0 | 1.9  | TA  |     | 58.1  | 92.4  | ML 2.2 |
|      | e Sg E | 12:48:42.8 | 1.9  |     | 5.5 |       |       |        |
| GSH  | e Pg Z | 12:48:40.5 | 2.4  |     | 2.4 | 81.0  | 182.7 | ML 2.0 |
| IBBN | e Sg E | 12:49:05.0 | 3.4  |     | 2.2 | 130.5 | 43.6  | ML 2.5 |
| TNS  | e Sg N | 12:49:21.1 | 0.3  |     | 5.1 | 197.8 | 133.5 | ML 2.3 |
| WLF  | e Sg E | 12:49:22.7 | 0.9  |     | 7.5 | 201.2 | 185.7 |        |
| CLZ  | e Pg Z | 12:49:12.4 | 1.5  |     | 1.8 | 275.0 | 79.7  | ML 2.6 |
|      | e Sg E | 12:49:43.9 | 1.0  |     | 1.6 |       |       |        |

BRG i Sg 12:51:04.3 9.3 527.5 94.2

| Date   | Origin Time       | OT_err   | Lat            | Long          | Smajor | Sminor | Az  | Depth     | D_err   | Ndef | Nsta | Gap | Mag          | Ref | Source     | Ev_type  |
|--|-------------------|----------|----------------|---------------|--------|--------|-----|-----------|---------|------|------|-----|--------------|-----|------------|----------|
| 1998/07/22   | 19:51:47.5        |          | 51.610N        | 7.875E        |        |        |     | 10G       |         |      | 9    |     | 3.1ML        | CLL | NEIC       |          |
| ML= 2.8(UCC), ML= 2.6(STR), Less reliable solution |                   |          |                |               |        |        |     |           |         |      |      |     |              |     |            |          |
| 1998/07/22   | 19:51:47.0        | + - 0.48 | 51.620N        | 7.800E        | 7.8    | 3.3    | 164 | 1         | + - 4.1 | 13   | 7    | 199 | 2.8ML        |     | SZGRF      | I        |
| 1998/07/22   | 19:51:47.1        | + - 0.28 | 51.610N        | 7.790E        | 4.4    | 3.3    | 138 | 1G        |         | 14   | 11   | 115 | 2.7ML        | TNS | BGR        | I        |
| <b>1998/07/22</b>                                  | <b>19:51:45.6</b> |          | <b>51.647N</b> | <b>7.744E</b> |        |        |     | <b>1G</b> |         |      |      |     | <b>2.6ML</b> |     | <b>RUB</b> | <b>I</b> |

Hamm/Westfalen, Ruhr Coal Mining District

| Sta  | Phase    | Time       | TRes | Def | S/N  | Dist  | EvAz  | Mag    |
|------|----------|------------|------|-----|------|-------|-------|--------|
| BUG  | i Pg - Z | 19:51:53.6 | 1.2  | TA  |      | 40.1  | 235.2 | ML 2.6 |
|      | e Sg E   | 19:51:59.3 | 2.2  |     | 3.9  |       |       |        |
| IBBN | e Pg Z   | 19:52:00.3 | 2.3  |     | 6.6  | 73.4  | 0.7   | ML 2.8 |
|      | e Sg E   | 19:52:09.4 | 2.8  |     | 3.9  |       |       |        |
| GSH  | e Pg Z   | 19:52:10.0 | 0.9  |     | 8.6  | 139.0 | 223.8 | ML 2.8 |
|      | e Sg E   | 19:52:27.0 | 1.7  |     | 4.1  |       |       |        |
| TNS  | e Pn Z   | 19:52:13.4 | 0.6  |     | 3.6  | 165.9 | 162.4 | ML 2.7 |
|      | e Sg N   | 19:52:32.3 | -0.7 |     |      |       |       |        |
| CLZ  | e Pn Z   | 19:52:15.1 | 0.3  |     |      | 182.3 | 82.2  | ML 2.7 |
|      | e Pg Z   | 19:52:18.1 | 1.6  |     | 20.5 |       |       |        |
|      | e Sg N   | 19:52:37.9 | 0.2  |     |      |       |       |        |
| WLF  | e Pg Z   | 19:52:28.0 | 0.5  |     | 5.2  | 247.3 | 207.6 |        |
| MOX  | e Pn Z   | 19:52:30.1 | 2.0  |     | 9.6  | 292.1 | 110.9 | ML 2.9 |
|      | i Pg     | 19:52:36.9 | 1.8  |     |      |       |       |        |
|      | e Sg N   | 19:53:09.8 | 0.7  |     |      |       |       |        |
| GRFO | e Pn Z   | 19:52:34.2 | 1.7  |     | 2.7  | 327.6 | 130.2 |        |
| CLL  | e Pn Z   | 19:52:39.2 | 2.0  |     |      | 366.1 | 93.9  | ML 3.0 |
|      | e Pg Z   | 19:52:47.9 | 0.2  |     | 2.6  |       |       |        |
|      | e Sg E   | 19:53:31.9 | 1.7  |     |      |       |       |        |
| BFO  | e Pn Z   | 19:52:38.6 | 0.8  |     | 4.4  | 371.2 | 173.3 |        |
| BRG  | e Pn     | 19:52:48.3 | 2.1  |     |      | 439.7 | 98.9  | mb 5.1 |
|      | e Sg     | 19:53:52.1 | 0.9  |     |      |       |       |        |
| GEC2 | e Pn Z   | 19:52:57.6 | 0.9  |     | 0.5  | 525.6 | 124.0 |        |

| Date                                  | Origin Time       | OT_err          | Lat            | Long           | Smajor      | Sminor     | Az         | Depth      | D_err | Ndef      | Nsta     | Gap        | Mag          | Ref        | Source     | Ev_type  |
|---------------------------------------|-------------------|-----------------|----------------|----------------|-------------|------------|------------|------------|-------|-----------|----------|------------|--------------|------------|------------|----------|
| 1998/07/23                            | 12:29:17.1        |                 | 47.662N        | 14.410E        |             |            |            | 10G        |       |           | 11       |            | 3.1ML        | VIE        | NEIC       |          |
| Intensity = IV (MSK) Felt at Liezen/A |                   |                 |                |                |             |            |            |            |       |           |          |            |              |            |            |          |
| <b>1998/07/23</b>                     | <b>12:29:19.9</b> | <b>+ - 0.96</b> | <b>47.700N</b> | <b>14.140E</b> | <b>10.0</b> | <b>6.7</b> | <b>140</b> | <b>10G</b> |       | <b>12</b> | <b>8</b> | <b>283</b> | <b>2.9ML</b> | <b>WET</b> | <b>BGR</b> | <b>L</b> |

Eastern Totes Gebirge/A

| Sta | Phase | Time | TRes | Def | S/N | Dist | EvAz | Mag |
|-----|-------|------|------|-----|-----|------|------|-----|
|-----|-------|------|------|-----|-----|------|------|-----|



|      |   |    |   |            |      |     |       |       |    |     |
|------|---|----|---|------------|------|-----|-------|-------|----|-----|
| BFO  | e | Pg | Z | 21:12:38.9 | 0.6  | 7.8 | 154.3 | 325.1 | ML | 1.8 |
|      | e | Sg | E | 21:12:55.0 | -1.2 |     |       |       |    |     |
| BEU  |   | Pn |   | 21:12:37.5 | -0.3 |     | 154.3 | 357.1 | ML | 2.5 |
|      | e | Pg | + | 21:12:38.8 | 0.5  |     |       |       |    |     |
|      |   | Sn |   | 21:12:55.1 | -0.8 |     |       |       |    |     |
|      | e | Sg |   | 21:12:57.5 | 1.3  |     |       |       |    |     |
| BBS  |   | Sg |   | 21:12:58.3 | 2.1  |     | 154.6 | 281.8 |    |     |
| FUR  | e | Sg | N | 21:13:02.2 | 1.7  |     | 169.5 | 50.1  | ML | 2.3 |
| LBG  | i | Pn | + | 21:12:39.8 | -0.1 |     | 171.8 | 341.9 | ML | 2.4 |
|      | i | Pg | - | 21:12:41.5 | 0.2  |     |       |       |    |     |
|      | e | Sn |   | 21:12:58.4 | -1.2 |     |       |       |    |     |
|      | e | Sg |   | 21:13:01.9 | 0.7  |     |       |       |    |     |
| SIND |   | Pn |   | 21:12:47.7 | -0.5 |     | 239.2 | 1.4   | ML | 2.3 |
|      |   | Pg |   | 21:12:53.5 | 0.8  |     |       |       |    |     |
|      | e | Sn |   | 21:13:12.4 | -1.5 |     |       |       |    |     |
|      |   | Sg |   | 21:13:20.3 | -0.1 |     |       |       |    |     |
| GRFO | e | Pg | Z | 21:13:05.6 | 1.9  | 1.6 | 304.1 | 23.7  |    |     |
|      | e | Sg | E | 21:13:38.7 | -0.3 |     |       |       |    |     |
| GRA1 | e | Pn | Z | 21:12:56.2 | 0.2  |     | 304.3 | 23.7  |    |     |
|      | e | Sg | N | 21:13:40.6 | 1.5  |     |       |       |    |     |
| WET  | e | Pn | Z | 21:12:59.5 | 0.4  | 3.6 | 329.7 | 47.7  | ML | 2.3 |
|      | e | Pg | Z | 21:13:09.5 | 1.5  |     |       |       |    |     |
|      | e | Sn | N | 21:13:34.3 | 1.3  |     |       |       |    |     |
|      | e | Sg | N | 21:13:45.3 | -1.0 |     |       |       |    |     |
| TNS  | e | Sn | N | 21:13:36.7 | 0.4  |     | 345.4 | 347.2 |    |     |
| GEC2 | e | Pg | E | 21:13:15.0 | 1.8  | 2.8 | 360.6 | 57.9  |    |     |
|      | e | Sg | E | 21:13:53.9 | -1.2 |     |       |       |    |     |
| MOX  | e | Sg | E | 21:14:12.8 | 2.8  |     | 412.6 | 21.0  |    |     |

| Date              | Origin Time                | OT_err   | Lat            | Long          | Smajor | Sminor | Az | Depth    | D_err   | Ndef      | Nsta      | Gap | Mag          | Ref | Source     | Ev_type |
|-------------------|----------------------------|----------|----------------|---------------|--------|--------|----|----------|---------|-----------|-----------|-----|--------------|-----|------------|---------|
| 1998/07/26        | 12:46:39.9                 | +/- 0.39 | 47.130N        | 9.276E        | 6.5    | 4.3    | 86 | 2        | +/- 0.0 | 21        | 27        | 262 | 2.8ML        |     | LDG        | L       |
| 1998/07/26        | 12:46:39.4                 |          | 47.141N        | 9.301E        |        |        |    | 10G      |         |           |           |     | 2.8ML        | VIE | NEIC       |         |
|                   | ML= 2.6(FUR), ML= 2.4(STR) |          |                |               |        |        |    |          |         |           |           |     |              |     |            |         |
| 1998/07/26        | 12:46:40.5                 |          | 47.190N        | 9.380E        |        |        |    | 10G      |         | 10        | 5         | 279 | 2.6ML        |     | SZGRF      | L       |
| 1998/07/26        | 12:46:40.2                 |          | 47.190N        | 9.360E        |        |        |    | 8        |         | 42        | 16        | 237 | 2.7ML        |     | LEDBW      | L       |
| <b>1998/07/26</b> | <b>12:46:39.3</b>          |          | <b>47.152N</b> | <b>9.351E</b> |        |        |    | <b>9</b> |         | <b>20</b> | <b>14</b> |     | <b>2.5ML</b> |     | <b>SED</b> |         |

Vaduz/Liechtenstein, Swiss-Liechtenstein-Austrian border reg

| Sta | Phase  | Time       | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|-----|--------|------------|------|-----|-----|-------|-------|--------|
| UBR | e Pg + | 12:46:54.1 | 0.8  |     |     | 81.9  | 43.8  | ML 2.8 |
|     | e Sg   | 12:47:05.1 | 2.3  |     |     |       |       |        |
|     | e SmS  | 12:47:08.5 | 1.7  |     |     |       |       |        |
| GUT | e Pg - | 12:46:56.9 | -0.0 |     |     | 103.7 | 350.3 | ML 2.5 |
|     | i PmP- | 12:46:58.2 | -0.7 |     |     |       |       |        |
|     | e Sg   | 12:47:09.5 | 0.4  |     |     |       |       |        |
|     | e SmS  | 12:47:10.9 | -1.4 |     |     |       |       |        |

|      |   |      |            |      |       |       |        |
|------|---|------|------------|------|-------|-------|--------|
| SPAK |   | Pg   | 12:46:59.1 | 0.5  | 113.8 | 338.4 |        |
| BHB  | e | Pn - | 12:47:00.4 | -0.1 | 124.5 | 348.1 |        |
|      | e | Pg - | 12:47:01.1 | 0.7  |       |       |        |
|      | e | Sn   | 12:47:15.4 | 0.0  |       |       |        |
| FELD |   | Pn   | 12:47:01.2 | 0.2  | 129.3 | 309.0 |        |
| JUN  | e | Pn + | 12:47:02.2 | 0.7  | 133.1 | 350.1 |        |
|      | e | Sg   | 12:47:19.0 | 1.6  |       |       |        |
| END  | e | Pn - | 12:47:01.9 | -0.0 | 136.5 | 297.9 |        |
|      | e | Pg + | 12:47:02.8 | 0.3  |       |       |        |
|      | e | Sg   | 12:47:19.2 | 0.8  |       |       |        |
| KIZ  | e | Pn - | 12:47:02.9 | 0.6  | 139.8 | 310.3 | ML 2.9 |
|      | i | Pg + | 12:47:03.2 | 0.2  |       |       |        |
|      | e | Sg   | 12:47:19.9 | 0.6  |       |       |        |
| BBS  | e | Pn   | 12:47:02.7 | 0.0  | 143.1 | 284.7 |        |
|      | e | Pg - | 12:47:04.2 | 0.5  |       |       |        |
|      | e | Sg   | 12:47:21.3 | 1.0  |       |       |        |
| BAW  | e | Pn + | 12:47:02.9 | -0.0 | 145.0 | 300.4 |        |
|      | e | Pg + | 12:47:04.0 | 0.1  |       |       |        |
|      | e | Sg   | 12:47:21.0 | 0.2  |       |       |        |
| BFO  | e | Pg + | 12:47:05.3 | 0.2  | 151.6 | 330.1 | ML 2.2 |
|      | e | Sg   | 12:47:23.3 | 0.6  |       |       |        |
| BEU  | e | Pn - | 12:47:04.4 | -0.3 | 159.3 | 1.7   | ML 2.7 |
|      | e | Pg + | 12:47:06.7 | 0.4  |       |       |        |
|      |   | Sn   | 12:47:22.7 | 0.0  |       |       |        |
|      | e | Sg   | 12:47:26.0 | 1.2  |       |       |        |
| HDH  | e | Pg   | 12:47:08.4 | -0.0 | 171.6 | 21.5  | ML 2.7 |
|      | e | Sg   | 12:47:29.0 | 0.6  |       |       |        |
| LBG  | e | Pn + | 12:47:06.1 | -0.3 | 173.1 | 346.3 | ML 2.3 |
|      | e | Pg - | 12:47:08.7 | -0.0 |       |       |        |
|      |   | Sn   | 12:47:25.0 | -0.7 |       |       |        |
|      |   | Sg   | 12:47:28.9 | 0.0  |       |       |        |
| SCE  | i | Pg - | 12:47:10.6 | 0.9  | 179.0 | 93.2  |        |
| FUR  | i | Pg + | 12:47:10.6 | 0.3  | 182.8 | 51.3  | ML 2.6 |
|      | i | Sg   | 12:47:32.9 | 1.3  |       |       |        |
| SIND | e | Pn + | 12:47:14.4 | -0.8 | 245.0 | 4.3   | ML 2.5 |
|      | e | Pg   | 12:47:21.2 | 0.3  |       |       |        |
|      | e | Sn   | 12:47:41.1 | 0.3  |       |       |        |
|      |   | Sg   | 12:47:49.1 | -0.2 |       |       |        |
| GRC1 | e | Pg Z | 12:47:23.7 | 0.2  | 260.8 | 37.4  |        |
|      | e | Sg E | 12:47:52.8 | -1.0 |       |       |        |
| GRA1 | e | Sg E | 12:48:10.1 | 1.0  | 314.3 | 25.4  | ML 2.8 |
| WET  | e | Pn Z | 12:47:27.2 | 0.2  | 342.8 | 48.5  | ML 2.7 |
|      | e | Pg Z | 12:47:37.0 | -0.5 |       |       |        |
|      | e | Sn N | 12:48:03.3 | 1.8  |       |       |        |
|      | e | Sg N | 12:48:17.7 | 0.5  |       |       |        |
| MOX  | e | Sg E | 12:48:39.8 | -0.1 | 422.1 | 22.2  |        |

| Date  | Origin Time       | OT_err  | Lat            | Long          | Smajor | Sminor | Az | Depth    | D_err  | Ndef      | Nsta      | Gap       | Mag          | Ref  | Source       | Ev_type  |
|---|-------------------|---------|----------------|---------------|--------|--------|----|----------|--------|-----------|-----------|-----------|--------------|------|--------------|----------|
| 1998/07/27  | 14:49:55.3        | +- 0.55 | 48.313N        | 9.007E        | 8.7    | 6.2    | 38 | 2        | +- 0.0 | 19        |           | 293       | 2.9ML        |      | LDG          | L        |
| 1998/07/27  | 14:49:55.0        |         | 48.346N        | 8.966E        |        |        |    | 10       |        | 19        | 15        |           | 2.6ML        |      | SED          |          |
| 1998/07/27  | 14:49:54.8        |         | 48.360N        | 9.040E        |        |        |    | 10G      |        | 12        | 8         | 169       | 2.4ML        | GRFO | BGR          | L        |
|   |                   |         | ML= 2.7(STR)   |               |        |        |    |          |        |           |           |           |              |      |              |          |
| <b>1998/07/27</b>   | <b>14:49:54.7</b> |         | <b>48.328N</b> | <b>9.037E</b> |        |        |    | <b>3</b> |        | <b>53</b> | <b>28</b> | <b>60</b> | <b>2.6ML</b> |      | <b>LEDBW</b> | <b>L</b> |
| Followed by aftershocks: 33 sec later with Ml=1.2, 37 sec later with ML=1.5 |                   |         |                |               |        |        |    |          |        |           |           |           |              |      |              |          |

Ebingen/Swabian Jura

| Sta  | Phase  | Time       | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|------|--------|------------|------|-----|-----|-------|-------|--------|
| JUN  | i Pg + | 14:49:55.3 | 0.1  | T   |     | 0.4   | 47.5  |        |
|      | i Sg   | 14:49:55.9 | 0.4  | T   |     |       |       |        |
| MSG  | e Pg - | 14:49:56.3 | 0.2  | T   |     | 7.9   | 359.1 |        |
|      | e Sg   | 14:49:57.6 | 0.5  | T   |     |       |       |        |
| BHB  | e Pg + | 14:49:56.6 | 0.3  | T   |     | 9.3   | 195.1 |        |
|      | e Sg   | 14:49:58.1 | 0.6  | T   |     |       |       |        |
| ENG  | e Pg + | 14:49:57.1 | 0.3  | T   |     | 12.3  | 262.0 |        |
|      | i Sg   | 14:49:58.9 | 0.6  | T   |     |       |       |        |
| GUT  | i P* - | 14:49:59.9 |      | T   |     | 29.2  | 168.5 | ML 2.8 |
|      | e S*   | 14:50:03.7 |      | T   |     |       |       |        |
| SPAK | i P* + | 14:50:00.5 |      | T   |     | 31.2  | 216.6 |        |
|      | e S*   | 14:50:04.7 |      | T   |     |       |       |        |
| BEU  | i P* + | 14:50:01.8 |      | T   |     | 39.8  | 44.3  | ML 2.6 |
|      | i S*   | 14:50:06.9 |      | T   |     |       |       |        |
|      | SmS    | 14:50:13.0 | -1.7 | T   |     |       |       |        |
| LBG  | i P* - | 14:50:02.0 |      | T   |     | 41.4  | 334.5 | ML 2.3 |
|      | e S*   | 14:50:07.2 |      | T   |     |       |       |        |
| BFO  | e P* + | 14:50:03.8 |      | T   |     | 52.3  | 270.5 | ML 2.2 |
|      | e Pg Z | 14:50:03.8 | 0.2  |     | 9.4 |       |       |        |
|      | e S*   | 14:50:10.0 |      | T   |     |       |       |        |
|      | e Sg N | 14:50:10.0 | 0.3  |     |     |       |       |        |
| HDH  | e P*   | 14:50:10.6 |      | T   |     | 90.9  | 71.3  | ML 2.5 |
| FELD | i P* + | 14:50:10.4 |      | T   |     | 91.7  | 237.2 |        |
|      | i Pn   | 14:50:11.7 | -0.9 | T   |     |       |       |        |
|      | e Sn   | 14:50:23.7 | -1.5 | T   |     |       |       |        |
| KIZ  | i P* + | 14:50:10.4 |      | T   |     | 92.7  | 243.9 | ML 2.8 |
|      | i Pn - | 14:50:11.4 | -1.4 | T   |     |       |       |        |
|      | S*     | 14:50:21.4 |      |     |     |       |       |        |
|      | Sn     | 14:50:23.1 | -2.3 | T   |     |       |       |        |
| UBR  | e P* - | 14:50:13.4 |      | T   |     | 107.4 | 131.7 | ML 2.6 |
|      | i Pn - | 14:50:14.3 | -0.3 | T   |     |       |       |        |
|      | e Sn   | 14:50:28.7 | 0.3  | T   |     |       |       |        |
| LIBD | i P* + | 14:50:14.1 |      | T   |     | 108.0 | 260.0 |        |
|      | e S*   | 14:50:27.4 |      | T   |     |       |       |        |
| BAW  | e Pn + | 14:50:14.0 | -1.7 | T   |     | 116.9 | 240.3 |        |
|      | e Pg + | 14:50:15.1 | 0.6  | T   |     |       |       |        |
|      | e Sg   | 14:50:29.3 | 1.1  | T   |     |       |       |        |

|      |   |    |   |            |      |   |     |       |       |  |    |     |  |  |  |  |  |  |  |
|------|---|----|---|------------|------|---|-----|-------|-------|--|----|-----|--|--|--|--|--|--|--|
| END  | e | Pn | + | 14:50:14.2 | -1.7 | T |     | 118.2 | 235.3 |  |    |     |  |  |  |  |  |  |  |
|      | e | Pg | - | 14:50:15.3 | 0.5  | T |     |       |       |  |    |     |  |  |  |  |  |  |  |
|      | e | Sg |   | 14:50:28.9 | 0.4  |   |     |       |       |  |    |     |  |  |  |  |  |  |  |
| SIND | e | Pg | - | 14:50:15.6 | 0.4  | T |     | 120.9 | 19.9  |  | ML | 2.8 |  |  |  |  |  |  |  |
| HEI  | e | Pg | + | 14:50:15.9 | 0.6  | T |     | 121.2 | 349.3 |  |    |     |  |  |  |  |  |  |  |
|      | e | Sg |   | 14:50:30.2 | 0.8  | T |     |       |       |  |    |     |  |  |  |  |  |  |  |
| KTD  | e | Pg | + | 14:50:17.6 | 0.8  | T |     | 130.5 | 328.0 |  |    |     |  |  |  |  |  |  |  |
|      | e | Sg |   | 14:50:34.0 | 2.0  | T |     |       |       |  |    |     |  |  |  |  |  |  |  |
| TOD  | e | Pg | - | 14:50:19.4 | 0.4  | T |     | 143.1 | 353.3 |  |    |     |  |  |  |  |  |  |  |
|      | e | Sg |   | 14:50:36.3 | 0.7  |   |     |       |       |  |    |     |  |  |  |  |  |  |  |
| BBS  | e | Pn |   | 14:50:18.0 | -1.6 | T |     | 149.0 | 230.4 |  |    |     |  |  |  |  |  |  |  |
| FUR  | e | Sg | N | 14:50:43.6 | 1.2  |   |     | 166.7 | 95.5  |  | ML | 2.9 |  |  |  |  |  |  |  |
| ABH  | e | Pg | + | 14:50:29.7 | 0.4  | T |     | 203.9 | 328.4 |  |    |     |  |  |  |  |  |  |  |
|      | e | Sg |   | 14:50:53.6 | 0.6  |   |     |       |       |  |    |     |  |  |  |  |  |  |  |
| RUP  | e | Pg | + | 14:50:30.7 | 0.4  | T |     | 210.1 | 317.4 |  |    |     |  |  |  |  |  |  |  |
|      | e | Sg |   | 14:50:55.9 | 1.1  |   |     |       |       |  |    |     |  |  |  |  |  |  |  |
| TNS  | e | Pg | Z | 14:50:30.8 | -0.4 |   | 3.4 | 214.9 | 348.7 |  | ML | 2.4 |  |  |  |  |  |  |  |
|      | e | Sg | N | 14:50:56.2 | 0.1  |   |     |       |       |  |    |     |  |  |  |  |  |  |  |
| GRFO | e | Pg | Z | 14:50:32.0 | -0.0 |   | 1.9 | 219.8 | 45.6  |  | ML | 2.4 |  |  |  |  |  |  |  |
|      | e | Sg | E | 14:50:57.3 | -0.3 |   |     |       |       |  |    |     |  |  |  |  |  |  |  |
| WLF  | e | Sg | N | 14:51:07.8 | -0.6 |   |     | 257.6 | 306.3 |  |    |     |  |  |  |  |  |  |  |
| WET  | e | Pg | Z | 14:50:44.5 | -0.4 |   | 1.4 | 295.9 | 70.7  |  | ML | 2.5 |  |  |  |  |  |  |  |
|      | e | Sg | N | 14:51:18.9 | -0.4 |   |     |       |       |  |    |     |  |  |  |  |  |  |  |
| MOX  | e | Sg | N | 14:51:24.1 | -1.5 |   |     | 317.8 | 34.9  |  | ML | 2.6 |  |  |  |  |  |  |  |
| CLZ  | e | Sg | N | 14:51:48.6 | -1.1 |   |     | 402.1 | 13.2  |  | ML | 3.0 |  |  |  |  |  |  |  |
| CLL  | e | Sg |   | 14:52:01.0 | 1.5  |   |     | 436.6 | 39.2  |  |    |     |  |  |  |  |  |  |  |
| BRG  | e | Pg |   | 14:51:12.6 | 1.1  |   |     | 452.7 | 49.5  |  |    |     |  |  |  |  |  |  |  |
|      | e | Sg |   | 14:52:03.3 | -0.8 |   |     |       |       |  |    |     |  |  |  |  |  |  |  |

| Date              | Origin Time       | OT_err  | Lat            | Long          | Smajor | Sminor | Az  | Depth     | D_err | Ndef | Nsta | Gap | Mag          | Ref | Source     | Ev_type  |
|-------------------|-------------------|---------|----------------|---------------|--------|--------|-----|-----------|-------|------|------|-----|--------------|-----|------------|----------|
| 1998/07/27        | 21:20:06.2        | +- 0.41 | 51.640N        | 7.740E        | 6.7    | 4.4    | 150 | 1G        |       | 9    | 5    | 124 | 2.1ML        |     | SZGRF      | I        |
| 1998/07/27        | 21:20:05.3        | +- 0.30 | 51.620N        | 7.790E        | 4.4    | 3.3    | 148 | 1G        |       | 14   | 7    | 117 | 2.2ML        | BUG | BGR        | I        |
| <b>1998/07/27</b> | <b>21:20:03.9</b> |         | <b>51.647N</b> | <b>7.744E</b> |        |        |     | <b>1G</b> |       |      |      |     | <b>2.0ML</b> |     | <b>RUB</b> | <b>I</b> |

Hamm/Westfalen, Ruhr Coal Mining District

| Sta  | Phase    | Time       | TRes | Def | S/N  | Dist  | EvAz  | Mag    |
|------|----------|------------|------|-----|------|-------|-------|--------|
| BUG  | i Pg - Z | 21:20:11.9 | 1.2  | TA  |      | 40.1  | 235.2 | ML 2.0 |
|      | e Sg N   | 21:20:17.5 | 2.1  |     | 47.5 |       |       |        |
| IBBN | e Pg Z   | 21:20:17.9 | 1.5  |     | 2.9  | 73.4  | 0.7   | ML 2.0 |
|      | e Sg E   | 21:20:27.4 | 2.5  |     | 5.6  |       |       |        |
| GSH  | e Pg Z   | 21:20:28.3 | 0.9  |     | 6.5  | 139.0 | 223.8 | ML 2.0 |
|      | e Sg N   | 21:20:46.1 | 2.5  |     | 8.7  |       |       |        |
| TNS  | e Pn Z   | 21:20:31.6 | 0.5  |     | 1.6  | 165.9 | 162.4 | ML 2.0 |
|      | e Pg Z   | 21:20:33.1 | 1.1  |     | 4.5  |       |       |        |
|      | e Sg N   | 21:20:51.6 | 0.3  |     | 6.9  |       |       |        |

|     |   |    |   |            |     |     |       |       |    |     |
|-----|---|----|---|------------|-----|-----|-------|-------|----|-----|
| CLZ | e | Pg | Z | 21:20:35.7 | 0.9 | 4.9 | 182.3 | 82.2  | ML | 2.1 |
|     | e | Sg | N | 21:20:56.5 | 0.5 |     |       |       |    |     |
| WLF | e | Pn | Z | 21:20:41.4 | 0.4 | 1.8 | 247.3 | 207.6 |    |     |
| MOX | e | Pn | Z | 21:20:49.3 | 2.8 | 1.8 | 292.1 | 110.9 | ML | 2.2 |
|     | e | Sn | N | 21:21:17.3 | 0.3 | 1.5 |       |       |    |     |
|     | e | Sg | N | 21:21:27.5 | 0.2 | 3.9 |       |       |    |     |
| BRG | e | Sg |   | 21:22:10.3 | 0.8 |     | 439.7 | 98.9  |    |     |

| Date              | Origin Time       | OT_err   | Lat            | Long          | Smajor | Sminor | Az | Depth    | D_err | Ndef      | Nsta      | Gap | Mag          | Ref | Source     | Ev_type |
|-------------------|-------------------|----------|----------------|---------------|--------|--------|----|----------|-------|-----------|-----------|-----|--------------|-----|------------|---------|
| 1998/07/29        | 01:12:49.8        | +/- 0.50 | 47.223N        | 9.450E        | 8.0    | 5.6    | 95 | 5G       |       | 18        |           | 278 | 2.1ML        |     | LDG        | L       |
| 1998/07/29        | 01:12:50.5        |          | 47.462N        | 9.521E        |        |        |    | 10G      |       |           | 12        |     | 2.2ML        | VIE | NEIC       |         |
| 1998/07/29        | 01:12:49.3        |          | 47.220N        | 9.550E        |        |        |    | 10G      |       | 5         | 4         | 273 | 1.9ML        |     | SZGRF      | L       |
| 1998/07/29        | 01:12:48.8        |          | 47.230N        | 9.550E        |        |        |    | 7        |       | 27        | 13        | 240 | 2.0ML        |     | LEDBW      | L       |
| <b>1998/07/29</b> | <b>01:12:48.4</b> |          | <b>47.219N</b> | <b>9.515E</b> |        |        |    | <b>7</b> |       | <b>24</b> | <b>14</b> |     | <b>1.9ML</b> |     | <b>SED</b> |         |

Feldkirch/A, Swiss-Liechtenstein-Austrian border region

| Sta  | Phase  | Time       | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|------|--------|------------|------|-----|-----|-------|-------|--------|
| UBR  | e Pg + | 01:13:00.4 | 0.5  |     |     | 68.0  | 40.7  | ML 1.7 |
|      | e Sg   | 01:13:09.5 | 1.6  |     |     |       |       |        |
| GUT  | e Pg - | 01:13:05.3 | 0.0  |     |     | 99.3  | 342.6 | ML 1.9 |
|      | e Sg   | 01:13:17.6 | 0.7  |     |     |       |       |        |
|      | e SmS  | 01:13:19.9 | -0.7 |     |     |       |       |        |
| SPAK | i PmP  | 01:13:08.5 | -1.0 |     |     | 112.4 | 331.2 |        |
|      | e SmS  | 01:13:22.6 | -1.3 |     |     |       |       |        |
| FELD | e Pg   | 01:13:12.1 | 0.8  |     |     | 134.9 | 303.4 |        |
|      | e Sg   | 01:13:28.2 | 1.2  |     |     |       |       |        |
| END  | e Pg + | 01:13:13.6 | 0.6  |     |     | 144.5 | 293.1 |        |
|      | e Sn   | 01:13:29.1 | -0.1 |     |     |       |       |        |
|      | e Sg   | 01:13:31.1 | 1.4  |     |     |       |       |        |
| KIZ  | e Px   | 01:13:15.8 |      |     |     | 145.1 | 305.0 | ML 2.1 |
|      | e Pg - | 01:13:13.4 | 0.4  |     |     |       |       |        |
|      | e Sg   | 01:13:31.0 | 1.1  |     |     |       |       |        |
| BEU  | e Pg + | 01:13:14.2 | 0.0  |     |     | 151.9 | 357.2 | ML 2.2 |
|      | e Sn   | 01:13:30.7 | -0.1 |     |     |       |       |        |
|      | e Sg   | 01:13:32.9 | 1.1  |     |     |       |       |        |
| BFO  | e Pg Z | 01:13:13.9 | -0.3 |     |     | 152.0 | 324.8 | ML 1.6 |
|      | e Sg N | 01:13:33.4 | 1.5  |     |     |       |       |        |
| BAW  | e Sn   | 01:13:30.9 | 0.0  |     |     | 152.4 | 295.7 |        |
|      | e Sg   | 01:13:33.1 | 1.1  |     |     |       |       |        |
| BBS  | e Sn   | 01:13:31.8 | 0.7  |     |     | 153.6 | 281.0 |        |
|      | e Sg   | 01:13:34.2 | 1.9  |     |     |       |       |        |
| HDH  | e Sg   | 01:13:34.8 | 0.6  |     |     | 160.3 | 18.5  | ML 2.0 |
| FUR  | e Sg E | 01:13:38.2 | 1.6  |     |     | 168.4 | 50.8  | ML 2.0 |
| LBG  | e Sn   | 01:13:33.9 | -0.6 |     |     | 169.4 | 341.8 | ML 2.0 |
|      | e Sg   | 01:13:37.3 | 0.4  |     |     |       |       |        |



|      |   |    |   |            |      |  |  |  |       |      |    |     |
|------|---|----|---|------------|------|--|--|--|-------|------|----|-----|
| SIND | e | Pn |   | 01:13:22.8 | -0.7 |  |  |  | 236.9 | 1.6  | ML | 2.0 |
|      | e | Sn |   | 01:13:47.9 | -0.9 |  |  |  |       |      |    |     |
|      |   | Sg |   | 01:13:56.2 | 0.0  |  |  |  |       |      |    |     |
| GRA1 | e | Sg | E | 01:14:15.3 | 0.5  |  |  |  | 302.4 | 24.0 | ML | 2.1 |
| WET  | e | Sg | E | 01:14:21.6 | -0.6 |  |  |  | 328.6 | 48.1 |    |     |

| Date       | Origin     | Time | OT_err | Lat     | Long   | Smajor | Sminor | Az  | Depth | D_err | Ndef | Nsta | Gap | Mag   | Ref | Source | Ev_type |
|------------|------------|------|--------|---------|--------|--------|--------|-----|-------|-------|------|------|-----|-------|-----|--------|---------|
| 1998/07/29 | 06:03:51.5 | +-   | 0.31   | 51.630N | 7.840E | 4.4    | 3.3    | 135 | 1G    |       | 11   | 5    | 113 | 2.3ML | GSH | BGR    | I       |
| 1998/07/29 | 06:03:50.4 |      |        | 51.647N | 7.744E |        |        |     | 1G    |       |      |      |     | 2.1ML |     | RUB    | I       |

Hamm/Westfalen, Ruhr Coal Mining District

| Sta  | Phase | Time         | TRes | Def | S/N  | Dist  | EvAz  | Mag    |
|------|-------|--------------|------|-----|------|-------|-------|--------|
| BUG  | e Pg  | Z 06:03:58.4 | 1.2  | TA  |      | 40.1  | 235.2 | ML 2.1 |
|      | e Sg  | E 06:04:04.4 | 2.6  |     | 22.4 |       |       |        |
| IBBN | e Pg  | Z 06:04:05.1 | 2.2  |     | 2.0  | 73.4  | 0.7   | ML 2.2 |
|      | e Sg  | E 06:04:12.7 | 1.3  |     | 3.9  |       |       |        |
| GSH  | e Pg  | Z 06:04:15.2 | 1.2  |     | 4.2  | 139.0 | 223.8 | ML 2.3 |
|      | e Sg  | E 06:04:32.3 | 2.2  |     | 8.0  |       |       |        |
| TNS  | e Pg  | Z 06:04:19.5 | 1.0  |     | 2.3  | 165.9 | 162.4 | ML 2.0 |
|      | e Sg  | E 06:04:37.8 | 0.0  |     | 6.9  |       |       |        |
| CLZ  | e Pn  | Z 06:04:19.1 | -0.5 |     | 1.4  | 182.3 | 82.2  | ML 2.2 |
|      | e Pg  | Z 06:04:21.8 | 0.5  |     | 5.0  |       |       |        |
|      | e Sg  | E 06:04:42.1 | -0.4 |     | 7.5  |       |       |        |

| Date       | Origin                 | Time | OT_err | Lat     | Long   | Smajor | Sminor | Az | Depth | D_err  | Ndef | Nsta | Gap | Mag   | Ref | Source | Ev_type |
|------------|------------------------|------|--------|---------|--------|--------|--------|----|-------|--------|------|------|-----|-------|-----|--------|---------|
| 1998/07/29 | 14:51:12.7             |      |        | 47.421N | 8.928E |        |        |    | 10G   |        |      | 5    |     | 2.1ML | STR | NEIC   |         |
|            | Less reliable solution |      |        |         |        |        |        |    |       |        |      |      |     |       |     |        |         |
| 1998/07/29 | 14:51:13.4             | +-   | 0.30   | 48.420N | 8.870E | 3.0    | 2.0    | 25 | 3     | +- 3.0 | 24   | 13   | 79  | 1.8ML |     | LEDBW  | B       |

Rottenburg, SW of Tuebingen

| Sta  | Phase  | Time       | TRes | Def | S/N | Dist  | EvAz  | Mag    |
|------|--------|------------|------|-----|-----|-------|-------|--------|
| LBG  | i Sg   | 14:51:21.8 | 0.5  | T   |     | 27.7  | 348.4 | ML 1.8 |
| BFO  | e Pg + | 14:51:20.1 | -0.3 | T   |     | 41.1  | 256.1 |        |
|      | e Sg   | 14:51:25.2 | 0.0  | T   |     |       |       |        |
| GUT  | i Pg + | 14:51:20.5 | -0.1 | T   |     | 42.9  | 154.8 | ML 1.6 |
|      | e Sg   | 14:51:26.3 | 0.7  | T   |     |       |       |        |
| KIZ  | i PmP+ | 14:51:29.2 | -1.9 | T   |     | 87.4  | 234.2 | ML 2.0 |
|      | e SmS  | 14:51:40.7 | -2.5 | T   |     |       |       |        |
| FELD | i Pg + | 14:51:28.0 | -0.3 | T   |     | 88.2  | 227.1 |        |
|      | e SmS  | 14:51:41.4 | -2.0 | T   |     |       |       |        |
| HDH  | e PmP  | 14:51:31.3 | -1.6 | T   |     | 100.2 | 79.0  | ML 1.7 |
|      | e SmS  | 14:51:44.8 | -1.6 | T   |     |       |       |        |

|      |        |            |      |   |       |       |    |     |
|------|--------|------------|------|---|-------|-------|----|-----|
| END  | e Pg - | 14:51:33.0 | 0.1  | T | 115.0 | 227.4 |    |     |
|      | e Sn   | 14:51:46.1 | -2.5 | T |       |       |    |     |
|      | e Sg   | 14:51:47.7 | 1.5  | T |       |       |    |     |
| SIND | e Pn   | 14:51:32.9 | -1.4 | T | 116.4 | 27.2  | ML | 1.9 |
|      | e Sg   | 14:51:47.6 | 0.9  | T |       |       |    |     |
| UBR  | i Pg + | 14:51:35.2 | 0.9  | T | 123.4 | 131.3 | ML | 2.0 |
|      | PmP    | 14:51:36.8 | 0.4  |   |       |       |    |     |
|      | e SmS  | 14:51:51.5 | -0.8 | T |       |       |    |     |
| BBS  | e Sg   | 14:51:56.1 | 0.7  | T | 146.8 | 224.2 |    |     |

| Date              | Origin Time       | OT_err | Lat            | Long          | Smajor | Sminor | Az | Depth     | D_err | Ndef | Nsta | Gap | Mag          | Ref | Source     | Ev_type  |
|-------------------|-------------------|--------|----------------|---------------|--------|--------|----|-----------|-------|------|------|-----|--------------|-----|------------|----------|
| 1998/07/30        | 23:37:56.7        |        | 51.515N        | 7.707E        |        |        |    | 5G        |       |      | 16   |     | 2.9ML        | STR | NEIC       |          |
| 1998/07/30        | 23:37:57.4        |        | 51.630N        | 7.760E        |        |        |    | 1G        |       | 12   | 7    | 121 | 2.7ML        |     | SZGRF      | I        |
| 1998/07/30        | 23:37:56.5        |        | 51.650N        | 7.750E        |        |        |    | 1G        |       | 27   | 14   | 125 | 2.7ML        | CLZ | BGR        | I        |
| <b>1998/07/30</b> | <b>23:37:55.5</b> |        | <b>51.647N</b> | <b>7.744E</b> |        |        |    | <b>1G</b> |       |      |      |     | <b>2.8ML</b> |     | <b>RUB</b> | <b>I</b> |

## Hamm/Westfalen, Ruhr Coal Mining District

| Sta  | Phase    | Time       | TRes | Def | S/N   | Dist  | EvAz  | Mag    |
|------|----------|------------|------|-----|-------|-------|-------|--------|
| BUG  | i Pg - Z | 23:38:03.5 | 1.2  | TA  |       | 40.1  | 235.2 | ML 2.8 |
|      | e Sg E   | 23:38:09.0 | 2.1  |     | 211.2 |       |       |        |
| IBBN | e Pg Z   | 23:38:09.6 | 1.7  |     | 7.5   | 73.4  | 0.7   | ML 2.6 |
| GSH  | e Pg Z   | 23:38:19.7 | 0.6  |     | 6.5   | 139.0 | 223.8 | ML 2.7 |
|      | e Sg E   | 23:38:37.4 | 2.2  |     | 42.5  |       |       |        |
| TNS  | e Pn Z   | 23:38:23.2 | 0.5  |     | 3.3   | 165.9 | 162.4 | ML 2.5 |
|      | e Sg N   | 23:38:42.9 | 0.0  |     | 29.5  |       |       |        |
| CLZ  | e Pn Z   | 23:38:25.1 | 0.4  |     | 2.7   | 182.3 | 82.2  | ML 2.7 |
|      | e Pg Z   | 23:38:26.6 | 0.2  |     |       |       |       |        |
|      | e Sg E   | 23:38:47.9 | 0.3  |     | 30.2  |       |       |        |
| WLF  | e Pn Z   | 23:38:33.8 | 1.2  |     | 1.7   | 247.3 | 207.6 |        |
|      | e Sg N   | 23:39:04.5 | -1.6 |     | 10.6  |       |       |        |
| MOX  | e Pn Z   | 23:38:39.9 | 1.8  |     | 4.7   | 292.1 | 110.9 | ML 2.7 |
|      | i Pg     | 23:38:46.7 | 1.7  |     |       |       |       |        |
|      | e Sg E   | 23:39:20.3 | 1.3  |     | 11.1  |       |       |        |
| BSEG | e Pn Z   | 23:38:40.2 | 0.2  |     | 1.7   | 307.6 | 33.2  | ML 2.6 |
|      | e Pg Z   | 23:38:47.7 | 0.1  |     | 1.5   |       |       |        |
|      | e Sn N   | 23:39:13.1 | 1.3  |     | 4.8   |       |       |        |
| GRA1 | e Pn Z   | 23:38:44.3 | 1.9  |     |       | 327.6 | 130.2 |        |
| GRFO | e Pn Z   | 23:38:44.0 | 1.6  |     | 3.4   | 327.6 | 130.2 | ML 2.9 |
|      | e Sg N   | 23:39:31.6 | 2.5  |     | 6.4   |       |       |        |
| CLL  | e Pg Z   | 23:38:57.7 | 0.2  |     | 6.4   | 366.1 | 93.9  | ML 2.8 |
|      | e Sg E   | 23:39:40.1 | 0.1  |     | 9.0   |       |       |        |
| BFO  | e Pn Z   | 23:38:48.5 | 0.8  |     | 4.8   | 371.2 | 173.3 | ML 2.7 |
|      | e Sn E   | 23:39:27.1 | 1.8  |     | 6.5   |       |       |        |
| BRG  | e Pn Z   | 23:38:57.7 | 1.7  |     | 2.5   | 439.7 | 98.9  |        |
|      | e Sg Z   | 23:40:01.9 | 0.8  |     | 3.6   |       |       |        |

|      |   |    |   |            |     |     |       |       |    |     |
|------|---|----|---|------------|-----|-----|-------|-------|----|-----|
| WET  | e | Pn | Z | 23:39:00.1 | 1.8 | 3.2 | 458.0 | 125.4 | ML | 2.8 |
| GEC2 | e | Pn | Z | 23:39:08.8 | 2.2 | 2.7 | 525.6 | 124.0 |    |     |
|      | e | Sg | N | 23:40:28.3 | 2.6 | 4.9 |       |       |    |     |

| Date              | Origin Time       | OT_err   | Lat            | Long          | Smajor | Sminor | Az | Depth     | D_err | Ndef      | Nsta     | Gap        | Mag          | Ref | Source     | Ev_type  |
|-------------------|-------------------|----------|----------------|---------------|--------|--------|----|-----------|-------|-----------|----------|------------|--------------|-----|------------|----------|
| 1998/07/31        | 02:01:55.8        | + - 0.30 | 50.715N        | 6.532E        | 5.0    | 3.4    | 37 | 3G        |       | 50        |          | 282        | 3.1ML        |     | LDG        | L        |
| 1998/07/31        | 02:01:55.3        |          | 50.700N        | 6.550E        |        |        |    | 2         |       |           |          |            | 2.9ML        |     | STR        |          |
|                   |                   |          |                |               |        |        |    |           |       |           |          |            | ML= 2.9(UCC) |     |            |          |
| 1998/07/31        | 02:01:54.2        |          | 50.800N        | 6.750E        |        |        |    | 10G       |       | 13        | 9        | 137        | 2.9ML        | CLZ | BGR        | L        |
| <b>1998/07/31</b> | <b>02:01:54.9</b> |          | <b>50.825N</b> | <b>6.646E</b> |        |        |    | <b>10</b> |       | <b>10</b> | <b>5</b> | <b>197</b> | <b>2.4ML</b> |     | <b>BNS</b> | <b>L</b> |

Dueren

| Sta  | Phase  | Time         | TRes | Def | S/N   | Dist  | EvAz  | Mag    |
|------|--------|--------------|------|-----|-------|-------|-------|--------|
| GSH  | e Pg   | Z 02:01:58.3 | -0.6 |     | 115.5 | 21.3  | 242.7 | ML 2.5 |
|      | e Sg   | N 02:02:01.6 | 0.0  |     |       |       |       |        |
| STB  | e Pg   | Z 02:02:00.4 | 0.3  | T   |       | 29.1  | 151.8 |        |
|      | e Sg   | E 02:02:03.9 | 0.2  | T   |       |       |       |        |
| KLL  | e Pg   | Z 02:02:00.5 | 0.1  | T   |       | 30.7  | 230.1 |        |
|      | i Sg   | N 02:02:04.1 | -0.0 | T   |       |       |       |        |
| BNS  | i Pg   | Z 02:02:02.0 | 0.1  | T   |       | 40.3  | 67.3  |        |
|      | i Sg   | E 02:02:06.9 | 0.2  | T   |       |       |       |        |
| HOB  | i Pg   | Z 02:02:04.1 | 0.3  | T   |       | 51.3  | 69.7  |        |
|      | i Sg   | E 02:02:09.8 | -0.0 | T   |       |       |       |        |
| BUG  | e Pg   | Z 02:02:08.3 | -0.5 |     | 26.4  | 81.1  | 32.2  | ML 2.8 |
|      | e Sg   | E 02:02:18.5 | 0.3  |     |       |       |       |        |
| KOE  | i Pg   | Z 02:02:10.2 | 0.2  | T   |       | 88.6  | 119.7 |        |
|      | e Sg   | N 02:02:20.4 | -0.0 | T   |       |       |       |        |
| TNS  | i Pn + | 02:02:17.6   | -0.7 |     |       | 143.9 | 117.1 | ML 2.3 |
|      | e Pg   | Z 02:02:18.6 | -0.7 |     | 7.4   |       |       |        |
|      | e Sg   | E 02:02:34.4 | -1.7 |     |       |       |       |        |
| IBBN | e Pn   | Z 02:02:23.9 | 0.9  |     | 3.5   | 181.8 | 24.5  | ML 2.9 |
|      | e Sg   | E 02:02:46.1 | -0.8 |     |       |       |       |        |
| CLZ  | e Pn   | Z 02:02:38.5 | 3.3  |     | 2.4   | 282.4 | 65.0  | ML 2.9 |
|      | e Sn   | N 02:03:03.9 | -0.3 |     |       |       |       |        |
|      | e Sg   | N 02:03:12.0 | -3.7 |     |       |       |       |        |
| GRFO | e Sg   | E 02:03:33.5 | -1.1 |     |       | 348.7 | 109.4 |        |
| MOX  | e Pn   | Z 02:02:44.5 | 1.0  |     | 1.7   | 350.2 | 91.4  | ML 2.7 |
|      | e Sg   | N 02:03:30.8 | -4.2 |     |       |       |       |        |
| CLL  | e Pg   | Z 02:03:08.2 | -2.6 |     | 1.7   | 447.2 | 80.6  | ML 3.1 |
|      | e Sg   | E 02:03:59.4 | -3.3 |     |       |       |       |        |
| BRG  | e Sg   | N 02:04:18.5 | -2.7 |     |       | 512.1 | 86.6  | ML 2.9 |
| GEC2 | e Pn   | Z 02:03:10.2 | 2.2  |     | 3.4   | 551.5 | 110.8 |        |
|      | e Sn   | N 02:04:04.2 | 3.1  |     |       |       |       |        |

## Unassociated arrivals

| Sta | Phase  | Date       | Time       | TRes | Def | S/N | Dist | EvAz | Mag |
|-----|--------|------------|------------|------|-----|-----|------|------|-----|
| CLL | e (Sg) | 1998/07/01 | 09:15:06.0 |      |     |     |      |      |     |
| CLL | e Sg   | 1998/07/01 | 10:55:38.0 |      |     |     |      |      |     |
| BRG | e Sg   | 1998/07/01 | 10:55:54.2 |      |     |     |      |      |     |
| CLL | e Sg   | 1998/07/04 | 14:47:39.0 |      |     |     |      |      |     |
| BRG | e Sg   | 1998/07/06 | 11:58:40.8 |      |     |     |      |      |     |
| CLL | e Sg   | 1998/07/06 | 22:35:36.0 |      |     |     |      |      |     |
| MOX | e (Sg) | 1998/07/07 | 02:02:43.7 |      |     |     |      |      |     |
| CLL | e (Sg) | 1998/07/07 | 05:14:14.0 |      |     |     |      |      |     |
| BRG | e Sg   | 1998/07/08 | 13:21:05.8 |      |     |     |      |      |     |
| CLL | e (Sg) | 1998/07/08 | 21:23:33.0 |      |     |     |      |      |     |
| BRG | e Sg   | 1998/07/09 | 00:27:24.4 |      |     |     |      |      |     |
| BFO | e Pg   | 1998/07/09 | 15:27:07.3 |      |     |     |      |      |     |
| BFO | e Sg   | 1998/07/09 | 15:27:18.3 |      |     |     |      |      |     |
| TNS | e Sg   | 1998/07/09 | 15:27:53.2 |      |     |     |      |      |     |
| BFO | e (Sg) | 1998/07/09 | 19:06:09.7 |      |     |     |      |      |     |
| CLL | e Sg   | 1998/07/09 | 22:22:36.0 |      |     |     |      |      |     |
| BFO | e (Sg) | 1998/07/10 | 14:56:33.3 |      |     |     |      |      |     |
| BRG | e Sg   | 1998/07/12 | 02:27:49.5 |      |     |     |      |      |     |
| CLL | e (Sg) | 1998/07/13 | 19:11:19.0 |      |     |     |      |      |     |
| BRG | e Sg   | 1998/07/15 | 07:56:58.7 |      |     |     |      |      |     |
| CLL | e Sg   | 1998/07/15 | 16:53:56.0 |      |     |     |      |      |     |
| CLL | e Sg   | 1998/07/16 | 10:20:14.0 |      |     |     |      |      |     |

|     |   |      |            |            |
|-----|---|------|------------|------------|
| BRG | e | Sg   | 1998/07/17 | 03:59:28.5 |
| BRG | e | Sg   | 1998/07/17 | 09:21:15.7 |
| BRG | e | Sg   | 1998/07/17 | 10:53:57.5 |
| BFO | e | Pg   | 1998/07/17 | 17:43:01.3 |
| BFO | e | Sg   | 1998/07/17 | 17:43:07.2 |
| BRG | i | Pg   | 1998/07/17 | 19:14:45.8 |
| BRG | i | Sg   | 1998/07/21 | 13:07:52.2 |
| TNS | e | Pn - | 1998/07/22 | 09:03:15.1 |
| TNS | i | Pg - | 1998/07/22 | 09:03:15.9 |
| TNS | i | Sg + | 1998/07/22 | 09:03:31.3 |
| BRG | i | Sg   | 1998/07/23 | 23:50:18.6 |
| BRG | e | Sg   | 1998/07/24 | 02:33:30.8 |
| BRG | e | Sg   | 1998/07/24 | 19:07:02.4 |
| CLL | e | (Pg) | 1998/07/29 | 00:03:12.0 |
| CLL | e | (Sg) | 1998/07/29 | 00:04:07.0 |