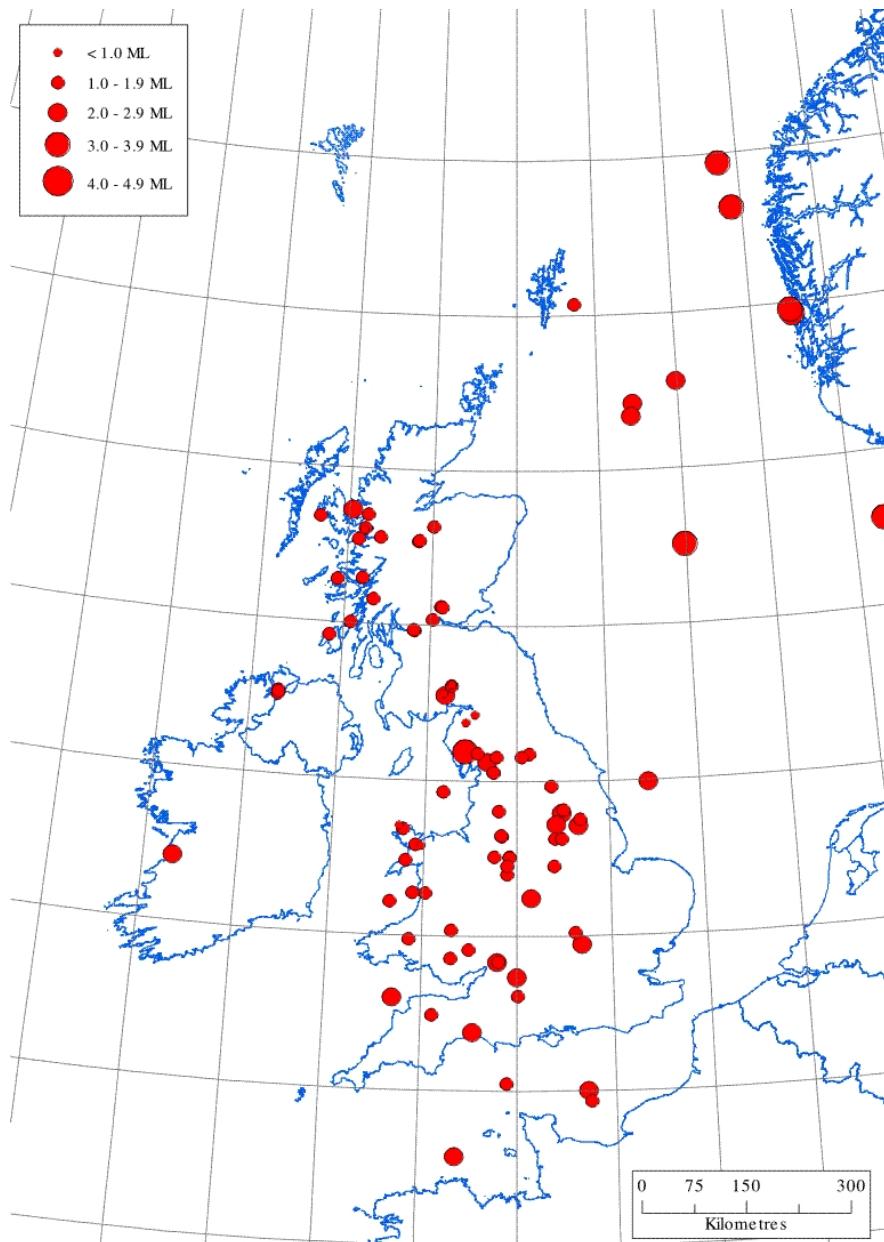


Bulletin of British Earthquakes 2010

D D Galloway (Editor)

Contributors: J Bukits and G D Ford



The National Grid and other
Ordnance Survey data are used
with the permission of the
Controller of Her Majesty's
Stationery Office.
Ordnance Survey licence number
100017897/2005

Bibliographical reference

GALLOWAY, D D 2011. Bulletin
of British Earthquakes 2010.
*British Geological Survey
Internal Report, OR/11/029*

BRITISH GEOLOGICAL SURVEY

The full range of Survey publications is available from the BGS Sales Desks at Nottingham and Edinburgh; see contact details below or shop online at www.thebgs.co.uk

The London Information Office maintains a reference collection of BGS publications including maps for consultation.

The Survey publishes an annual catalogue of its maps and other publications; this catalogue is available from any of the BGS Sales Desks.

The British Geological Survey carries out the geological survey of Great Britain and Northern Ireland (the latter as an agency service for the government of Northern Ireland), and of the surrounding continental shelf, as well as its basic research projects. It also undertakes programmes of British technical aid in geology in developing countries as arranged by the Department for International Development and other agencies.

The British Geological Survey is a component body of the Natural Environment Research Council.

Keyworth, Nottingham NG12 5GG

☎ 0115-936 3241 Fax 0115-936 3488
e-mail: sales@bgs.ac.uk
www.bgs.ac.uk
Shop online at: www.thebgs.co.uk

Murchison House, West Mains Road, Edinburgh EH9 3LA

☎ 0131-667 1000 Fax 0131-668 2683
e-mail: scotsales@bgs.ac.uk

London Information Office at the Natural History Museum (Earth Galleries), Exhibition Road, South Kensington, London SW7 2DE

☎ 020-7589 4090 Fax 020-7584 8270
☎ 020-7942 5344/45 email: bgslondon@bgs.ac.uk

Forde House, Park Five Business Centre, Harrier Way, Sowton, Exeter, Devon EX2 7HU

☎ 01392-445271 Fax 01392-445371

Geological Survey of Northern Ireland, 20 College Gardens, Belfast BT9 6BS

☎ 028-9066 6595 Fax 028-9066 2835

Maclean Building, Crowmarsh Gifford, Wallingford, Oxfordshire OX10 8BB

☎ 01491-838800 Fax 01491-692345

Parent Body

Natural Environment Research Council, Polaris House, North Star Avenue, Swindon, Wiltshire SN2 1EU

☎ 01793-411500 Fax 01793-411501
www.nerc.ac.uk

Contents

Contents.....	1
1 Introduction	3
2 The BGS UK Seismograph Network	3
3 Earthquake Parameters and Their Errors	4
Hypocentre Location	4
Magnitude	4
Intensity	5
4 Summary of 2010 Seismicity	5
Acknowledgements.....	8
References	9
Figures	10
Tables.....	21
Appendix 1 Key to Bulletin Encoding	43
Appendix 2 Key to Phase Data Encoding.....	44
Appendix 3 The European Macroseismic Scale (EMS 98)	45

FIGURES

Figure 1. Epicentre map of earthquakes in 2010 as listed in Table 1.

Figure 2. Seismograph stations operated by BGS during 2010 (red) along with station operated by other agencies in the British Isles and used for automatic detection (blue). The contours show earthquake detection capability in terms of Richter local magnitude (ML) calculated for average background noise conditions (4nm) where the detection criterion is that the signal has to exceed 4nm at 10Hz at 4 stations.

Figure 3. Epicentres of earthquakes with magnitudes of 2.5 ML and above, in the period 1979 to 2010.

Figure 4. Epicentres of earthquakes with magnitudes of 3.5 ML and above, in the period 1970 to 2010.

Figure 5. Seismograms of the ground displacement from the Coniston, Cumbria earthquake, 21 December 2010, recorded by BGS seismograph stations.

Figure 6. Focal Mechanism of the Coniston earthquake, 21 December 2010.

Figure 7. Macroseismic map of the Coniston earthquake.

Figure 8. Seismograms of the ground displacement from the Eastern North Sea earthquake, 19 February 2010, recorded by BGS seismograph stations.

Figure 9. Seismograms of the ground displacement from the Isle of Anglesey earthquake, 1 February 2010, recorded by BGS seismograph stations.

Figure 10. Focal Mechanism of the Isle of Anglesey earthquake, 1 February 2010.

Figure 11. Seismograms of the ground displacement from the Stroud, Gloucestershire earthquake, 30 July 2010, recorded by BGS seismograph stations.

Figure 12. Focal Mechanism of the Stroud earthquake, 30 July 2010.

Figure 13. Focal Mechanism of the Stroud earthquake, 9 August 2010.

TABLES

Table 1. Catalogue of events in chronological order: 2010.

Table 2. Phase data of the earthquakes in Table 1.

Table 3. Geographic coordinates and instrumentation of BGS seismograph stations.

Table 4. Depth / crustal velocity models used in earthquake locations.

1 Introduction

The British Geological Survey's (BGS) Seismic Monitoring and Information Service operate a nationwide network of seismograph stations in the United Kingdom (UK). Earthquakes in the UK and coastal waters are detected within limits dependent on the distribution of seismograph stations. Location accuracy is improved in offshore areas through data exchange with neighbouring countries. This bulletin contains locations, magnitudes and phase data for all earthquakes detected and located by the BGS during 2010, listed in Tables 1 and 2. Maps showing seismic activity in 2010 (Figure 1), and the larger magnitude events since 1979 ($ML > 2.5$) and since 1970 ($ML > 3.5$) are also included. The bulletin covers all of the UK land mass and its coastal waters including the North Sea (-11°W to 6°E and 47°N to 65°N).

All events believed to be of true tectonic origin are included. Coalfield events are also included. Acoustic disturbances, such as sonic booms from supersonic aircraft, are included when they are felt. The airborne waves are readily identified by their slow travel time across an array or by their signature on a microphone, but they are frequently mistaken as small earthquakes by the public. They are indicated by 'SONIC' in both the locality and comments column of Table 1.

Significant non-natural events, such as explosions, which received media attention or were greater than magnitude 2.5 ML or felt by local residents, are also included in Table 1. Smaller events that are known, or suspected to be of explosive origin are excluded from the bulletin where possible. These include explosions due to quarrying, mining, weapon testing or disposal, naval exercises, geophysical prospecting and civil engineering. Unfortunately, identification by record character, location and time of occurrence is not always conclusive and some man-made events may be included in the bulletin or, more rarely, a small natural event may have been excluded.

2 The BGS UK Seismograph Network

The UK seismograph network consists of almost 100 stations with broadband, short period and/or strong motion accelerometers. Thirty-three sites are equipped with broadband seismometers and twenty-four have strong motion accelerometers, fifteen of which are co-located with broadband sensors. The remaining sites are equipped with short period seismometers. Data from nearly all stations are transferred in near real-time to the BGS offices in Edinburgh for automatic processing, analysis and archival. Seismic events are detected using automatic processing algorithms, but can also be extracted manually from our archive of continuous data, then analysed to determine event types, locations and magnitudes. Operational BGS seismograph stations are shown in Figure 2.

The detection capabilities of a network depend upon station distribution, instrument sensitivity and background noise levels. Figure 2 also shows the magnitude detection thresholds for the seismograph stations operational in December 2010. The contours illustrate the lower threshold magnitude for an earthquake to significantly exceed 4 nanometres of noise (average) at 10 Hz on at least four seismographs. These detection levels hold true only if data from all stations are continuously monitored. Smaller events may go undetected unless they are felt and reported to BGS by local inhabitants, in which case detection can be strongly dependent on the population density.

The whole of the UK is covered by the seismograph network for approximately magnitude 1.5 ML, and above, at times of average ambient noise levels. Noise sources such as wind, ocean waves and traffic vary considerably with time (typically 0.5 to 15 nanometres, at 10 Hz) causing the magnitude thresholds to increase or decrease. In conditions of high noise, 0.8 ML should be added to the contour values, causing the threshold to rise to about 2.3 ML. Normally, however, an earthquake of this size would be felt, if not detected, in the areas of poorer instrumental coverage. The bulletin can, therefore, be assumed to be complete for all earthquakes of magnitude 2.3 ML and above.

Given the variability in the earthquake detection threshold, as governed by ambient noise conditions and the geometry of the observing network, the bulletin is biased towards certain localities. Figure 3 shows only earthquakes with magnitude 2.5 ML or greater, in the period 1979 to 2010. The data set is considered complete for these magnitudes in all localities onshore. Seismicity for the period 1970 to 2010 is shown in Figure 4 with a threshold magnitude of 3.5 ML. This is the period covered by BGS instrumentation that, in the early years, only consisted of the network around Edinburgh (LOWNET) and Eskdalemuir (ESK) and a station near Kyle of Lochalsh (KYL). The data set is likely to be complete for such magnitudes.

3 Earthquake Parameters and Their Errors

HYPOCENTRE LOCATION

By accurately timing the signal onsets at a minimum of three stations, a location can be found for an earthquake that satisfies the observed pattern of arrivals. Instrumental locations in the bulletin were obtained using the computer program HYPOCENTER (Lienert and Havskov 1995) that iteratively adjusts a trial hypocentre (latitude, longitude, depth, and origin time) until the observed and computed arrival times coincide closely.

The accuracy of locations is dependent on distances from the closest stations, the distribution of the stations around the epicentre, the resolution to which signal onsets can be timed from the records, and the accuracy with which the seismic wave velocities through the Earth are known.

The accurate determination of earthquake depth presents a more difficult problem, mainly because phase arrival patterns at the seismographs can still be satisfied for a large range of depths merely by adjusting the origin time to suit. Depth is usually only well constrained when there is a station very close to the epicentre.

The best depth determinations are obtained when an earthquake or earthquake series occurs almost beneath a network. For events at larger distances the depth errors can be many kilometres. Where the depth error, ERZ in Table 1, is 0.0, this indicates that the depth has been fixed in the hypocentre calculation. This is the case for explosions, which are known to occur at the surface, and for events at larger distances, where depth control is poor.

MAGNITUDE

All earthquakes in the bulletin have been assigned a local magnitude (ML) as defined by Richter (1935):

$$ML = \log_{10} (A / A_0)$$

Where A is the maximum deflection (centre to peak in mm) registered on a Wood-Anderson seismograph and A_0 is that for a 'standard' magnitude zero earthquake at the same distance. The A_0 term is thus a distance correction factor, tabulated by Richter to 200 km, and later adjusted to

include up to 600 km. Although Richter intended his method to be an approximate quantification of earthquake size and his attenuation term, A_0 , strictly only applies to California, the formula is still used worldwide today. The ML magnitudes in this bulletin have been calculated according to Richter's formula after converting the output of the BGS instruments to an equivalent Wood-Anderson deflection. Ideally, the measurements are made on two horizontal instruments and averaged but, if this is not possible, the mean of the magnitudes from a number of verticals are used. Ground motion registered at a seismograph varies with site conditions, distance and direction from the earthquake, and the nature of the ray path. Consequently, it is important to take the mean from a good distribution of stations. The resulting errors on magnitudes quoted in the bulletin will normally be less than 0.4 ML.

INTENSITY

Intensity is a measure of the effect of the shaking produced by the earthquake on people, structures and objects. It decreases with distance from a maximum value (I_{\max}) usually found close to the epicentre. The maximum felt intensity is quoted, where known, with reference to the European Macroseismic Scale (EMS), (Grünthal, 1993).

4 Summary of 2010 Seismicity

There were 98 earthquakes located by the BGS seismic monitoring network during the year, with 27 having magnitudes of 2.0 ML or greater and eight having magnitudes of 3.0 ML or greater. Nine events with a magnitude of 2.0 ML or greater were reported felt, together with a further seven smaller ones, bringing the total to sixteen felt earthquakes in 2010.

The largest onshore earthquake of the year, with a magnitude of 3.5 ML, occurred approximately 5 km northwest of Coniston, Cumbria, on 21 December at 22:59 UTC, at a depth of approximately 13 km (Figures 5, 6 & 7). The focal mechanism obtained for this event shows predominantly strike slip faulting with a small normal component with either left lateral motion on a near vertical fault striking north-northeast south-southwest or right lateral motion on an east-southeast west-northwest fault that dips slightly north-northeast. Data from some 700 questionnaires, collected online, were used to determine how widely the earthquake had been felt. The highest intensity experienced was 5 EMS (European Macroseismic Scale), which was observed over an area extending to a radius of approximately 20-25 kilometres from the epicentre. Beyond this distance, an intensity of 4 EMS was observed in towns such as Penrith (about 35 km to the northeast) and Maryport, Workington and Whitehaven (about 35-45 km to the northwest). The most credible distant reports were from towns such as Kirkcudbright, Castle Douglas, Dalbeattie and some small hamlets a few kilometres northeast of Dumfries (80-90 km) to the north; Blackpool, Lytham St. Annes and Preston (60-75 km) to the south; the Isle of Man (90 km), to the west; and to the east, the earthquake was reported as having been felt in several hamlets in the west of the county of Durham (around 90 km). This is the largest event detected in the general area since the magnitude 3.7 ML Ulverston earthquake on 28 April 2009, which was felt in the area with an intensity of at least 5 EMS. Historically, the largest earthquake to have occurred nearby was the magnitude 4.7 ML Carlisle event that occurred on 26 December 1979 and was felt throughout Scotland and northern England with a maximum intensity of 6 EMS.

The largest offshore earthquake of 2010 occurred in the eastern North Sea region on 19 February, at 21:09 UTC, with a magnitude of 4.8 ML (Figure 8). It was located approximately 570 km east of Aberdeen and was reported felt in Denmark. A further ten events occurred in the North Sea and adjacent waters during the year, with magnitudes ranging between 2.0 and 3.8 ML, including a magnitude 3.5 ML earthquake on 1 September, which was felt onboard an accommodation vessel anchored to the sea bed in the Erskine oil field. Four other offshore

earthquakes occurred, during the year, with locations in the English Channel region and with magnitudes ranging between 1.4 and 2.2 ML.

Three earthquakes occurred in County Donegal, Ireland on 7, 26 and 27 January with magnitudes of 1.6 ML, 1.5 ML and 1.7 ML, respectively. All three were felt (intensity 3 EMS) by people in Burnfoot and Bridge End who described “felt a slight tremor” and “the windows shook”. Later in the year, a magnitude 2.7 ML earthquake on 6 May in County Clare, Ireland, was felt in Ennistymon, Liscannor, Lahinch, Lisdoonvarna and Doolin with intensities of at least 3 EMS.

In Wales, two events on 1 February and 12 March, with magnitudes of 1.0 ML and 0.5 ML, respectively, occurred near the northwest coast of the Isle of Anglesey (Figure 9). They were both located within 6 km of Wylfa Power Station. The focal mechanism for the 1 February event shows strike-slip faulting with a small normal component and either left lateral motion on a west-southwest east-northeast striking fault or right lateral motion on a south-southeast north-northwest striking fault (Figure 10).

On 2 February, an earthquake with a magnitude of 1.8 ML was detected 3 km SSE of the town of Blackford, Perth and Kinross. The BGS received two reports from residents in the town, describing “felt an impact and some movement” and “the heaters and windows rattled”. An intensity of 3 EMS was assigned to the earthquake.

An earthquake with a magnitude of 2.3 ML occurred at 17:33 UTC on 7 June, approximately 4 km north of Dumfries, Dumfries and Galloway. Several reports were received from people in the town of Dumfries, describing “the house shuddered and the windows rattled”, “we heard a bang, felt a rumble then the bed shook”, “the house appeared to lift and then drop suddenly” and “we thought at first it was a lorry passing that shook the house”, indicating an intensity of at least 3 EMS. It locates approximately 2 km NNE of the magnitude 3.5 ML Dumfries earthquake of 26 December 2006 which was felt over an area of around 3,600 km² with a maximum intensity of 5 EMS.

A magnitude 2.7 ML earthquake occurred on 19 June at 10:17 UTC, approximately 7 km northeast of Gainsborough, Lincolnshire. No reports were received of anyone having felt the event. It is the largest event detected in the general area (around Lincolnshire) since the magnitude 2.9 ML Alkborough earthquake on 30 September 2009 and the magnitude 3.0 ML Goxhill earthquake on 11 April 2009, which were both felt in the area with intensities of at least 3 EMS. It is also located approximately 23 km west of the magnitude 5.2 ML Market Rasen earthquake which occurred on 27 February 2008 and was felt throughout England with a maximum intensity of 6 EMS.

In South Yorkshire, two events on 30 June and 7 September with magnitudes of 2.0 ML and 2.2 ML, respectively, occurred near Doncaster. The 2.0 ML event was felt by residents in Doncaster and the 2.2 ML event was felt by residents in Rossington, both were assigned intensities of 3 EMS. Their shallow depths and characteristics of their seismograms are similar to previous activity in the area that was associated with mining.

A magnitude 2.7 ML earthquake occurred on 30 July, at 23:39 UTC, with an epicentre 9 km east of Oldbury power station and at a depth of around 11 km (Figure 11). The BGS received two reports from residents of Stroud who described “the sofa shook, as did the building and there was a loud crack” and “we heard the rumbling approaching through the bedrock before experiencing the trembling which only lasted a few seconds”, indicating an intensity of at least 3 EMS. This is the largest earthquake detected in the region since the magnitude 2.1 ML Lydney earthquake on 20 April 1989. On 9 August, an earthquake, with a magnitude of 1.5 ML, also occurred in the area. Focal mechanisms were produced for both events and show similar though not identical faulting styles (Figures 12 & 13). The mechanism for the second event is slightly better constrained and shows strike-slip faulting with a small normal component with either left lateral motion on a north-south fault or right lateral motion on a near east-west fault.

At 22:10 UTC, on 1 September, an earthquake with a magnitude of 1.1 ML occurred approximately 5 km southwest of Bangor, Gwynedd, in North Wales. The BGS received several reports from residents in Bangor and Caernarfon who described “a sudden moderate rumble for about three seconds”, “nothing moved but I heard a rumbling noise” and “all the windows in the kitchen were shaking”, indicating an intensity of around 3 EMS. Historically, larger earthquakes have been known to occur in the area, the largest being a magnitude 3.5 ML earthquake that occurred in 1874 close to Caernarfon.

On 3 September, an earthquake with a magnitude of 2.4 ML occurred approximately 9 km southeast of Kendal, Cumbria. It was felt by several residents in Kendal and Staveley. Reports described the earthquake as “like a thump, followed by a perceptible shaking about a second later” and “the roof timbers creaked”, indicating an intensity of 3 EMS. A month earlier, on 4 August, a magnitude 1.7 ML earthquake with a location near Windermere, around 18 km northwest of the 3 September event, was also felt in Kendal and Staveley and with similar intensities of 3 EMS. Both these events locate in the same region (within 15 km) as the magnitude 3.0 ML Grange-over-Sands earthquake on 26 June 1993, which was felt in the region with a maximum intensity of 5 EMS.

Acknowledgements

We are indebted to the States of Jersey Meteorological Office, the Universities of East Anglia and Leeds, and many individuals who assisted with station operation.

The work was supported in part by:

British Energy (as part of EDF Energy)
Department of Communities and Local Government
Office for Nuclear Regulation (An agency of HSE)
Horizon Nuclear Power Ltd
Jersey Water
Magnox North
Magnox South
Natural Environment Research Council
Scottish & Southern Energy plc
Scottish Power
Scottish Water
Sellafield Ltd

Interchange of data with UK and European agencies, has contributed to the accuracy of location of some of these events and to the determination of their magnitudes. They include:

Atomic Weapons Establishment (Blacknest, UK)
Centre Seismologique Euro-Mediterranean (Bruyères-le-Châtel, France)
Dublin Institute for Advanced Studies (Dublin, Ireland)
GEUS (Geological Survey of Denmark and Greenland)
Institute de Physique du Globe (Paris, France)
Koninklijk Nederlands Meteorologisch Instituut (Ae de Bilt, Netherlands)
Laboratoire de Detection et de Geophysique (Bruyères-le-Châtel, France)
NORSAR (Oslo, Norway)
University of Bergen (Bergen, Norway)
University of Keele (Keele, UK)

This report is published with the approval of the Director of the British Geological Survey (NERC).

References

- Grünthal, G.,(Ed) 1993. European Macroseismic scale 1992 (up-dated MSK-scale). Cahiers du Centre European de Geodynamique et de Seismologie. **Vol 7**.
- Lee, W. and Lahr, J., 1975. HYPO'71 (revised). A computer program for determining hypocentre, magnitude and first motion pattern of local earthquakes, *Open File Rep. U.S. Geol. Surv.* **75**.
- Lienert, B.R.E., and Havskov, J., 1995. A computer program for locating earthquakes both locally and globally, *Seis. Res. Lett.*, **66**, 26-36.
- Richter, C., 1935. An instrumental earthquake magnitude scale, *Bull.Seism. Soc.Am.*, **25**, 1-32.
- Snoke, J. A., J. W. Munsey, A. C. Teague, and G. A. Bollinger (1984). A program for focal mechanism determination by combined use of polarity and SV -P amplitude ratio data, *Earthquake Notes*, **55, 3, 15**.



Figure 1. Epicentre map of earthquakes in 2010 as listed in Table 1.

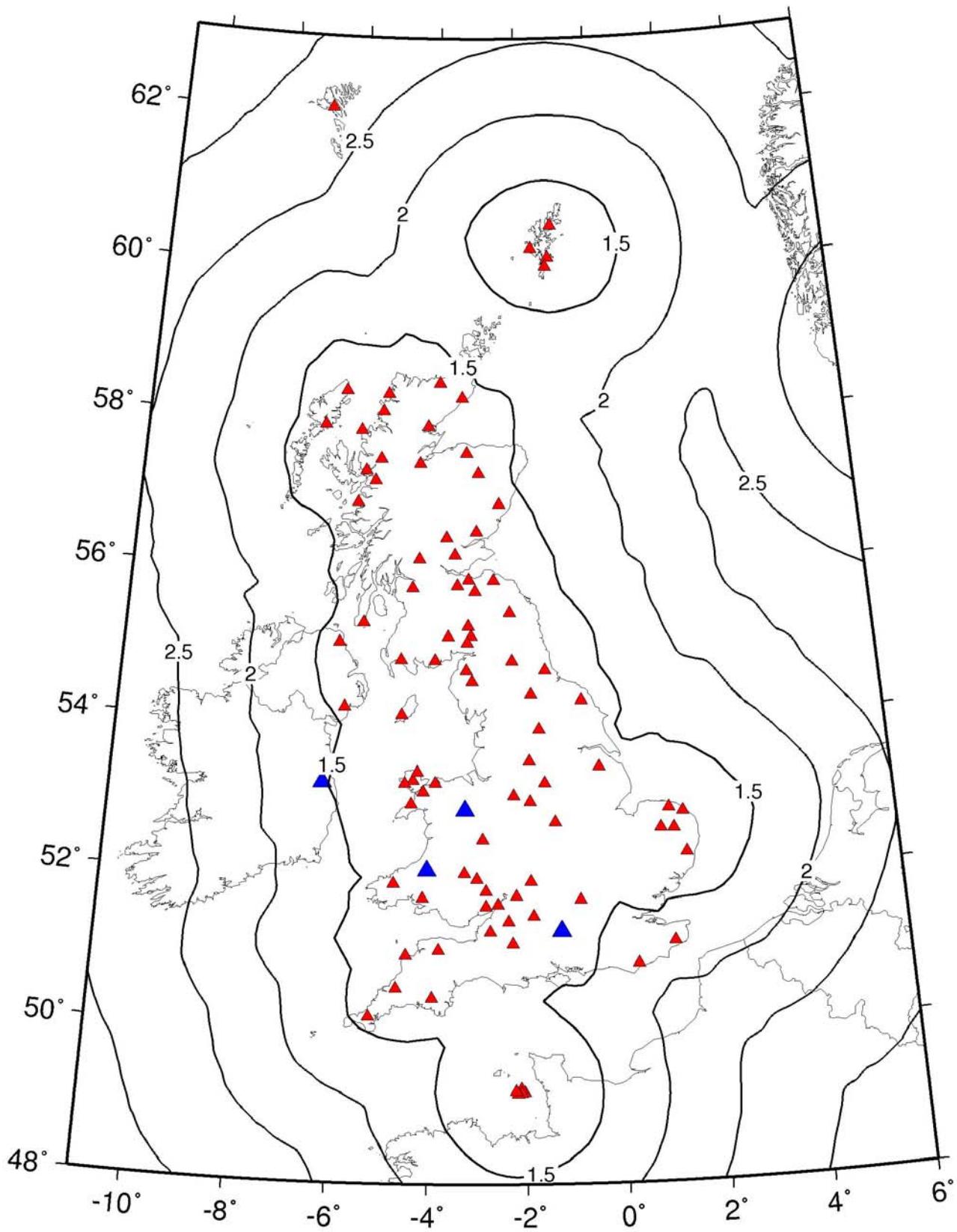


Figure 2. Seismograph stations operated by BGS during 2010 (red) along with station operated by other agencies in the British Isles and used for automatic detection (blue). The contours show earthquake detection capability in terms of Richter local magnitude (ML) calculated for average background noise conditions (4nm) where the detection criterion is that the signal has to exceed 4nm at 10Hz at 4 stations.



Figure 3. Epicentres of earthquakes with magnitudes of 2.5 ML and above, in the period 1979 to 2010.



Figure 4. Epicentres of earthquakes with magnitudes of 3.5 ML and above, in the period 1970 - 2010.

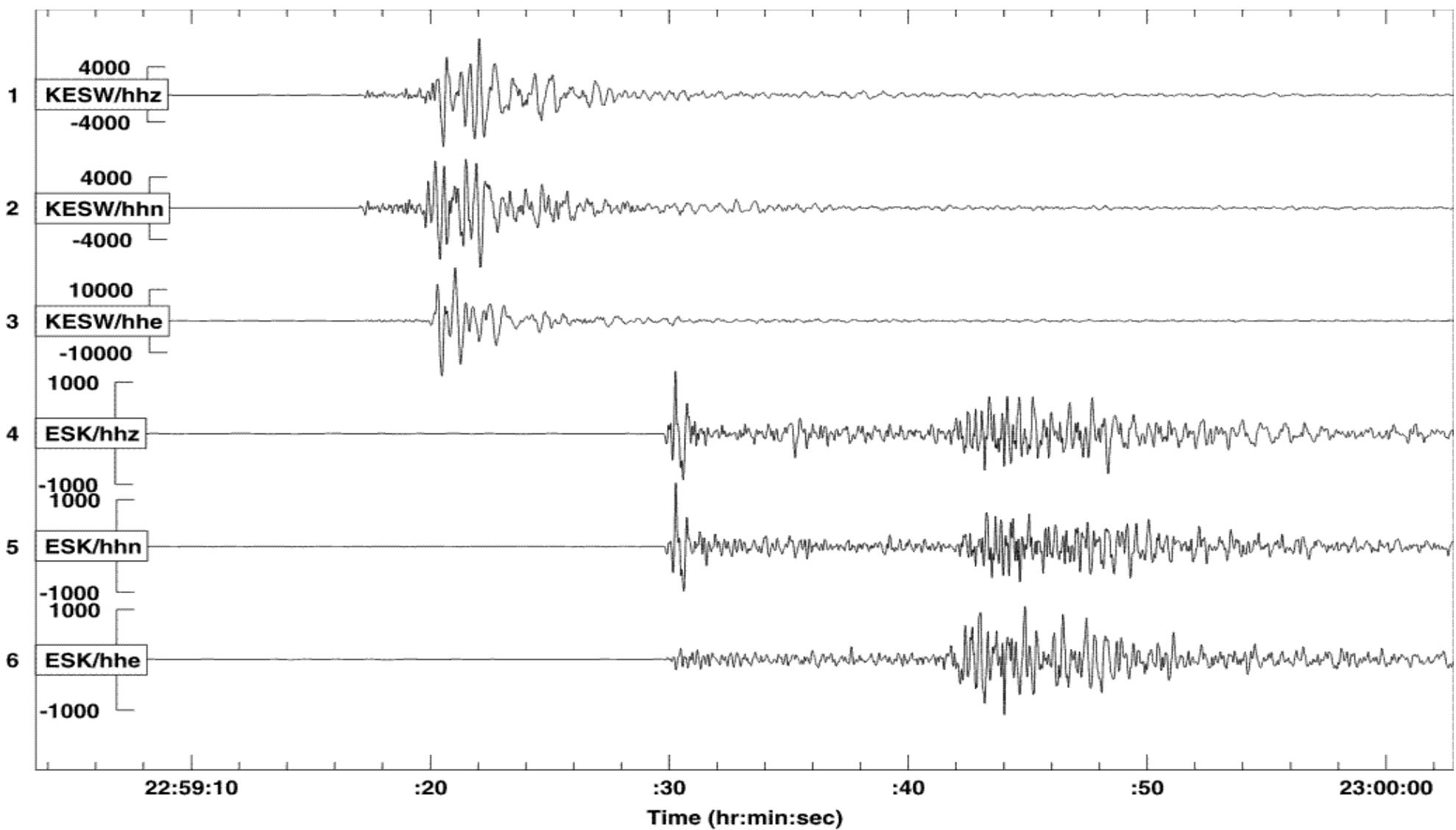


Figure 5. Seismograms of the ground displacement from the magnitude 3.5 ML Coniston earthquake, 21 December 2010, recorded by BGS seismograph stations.

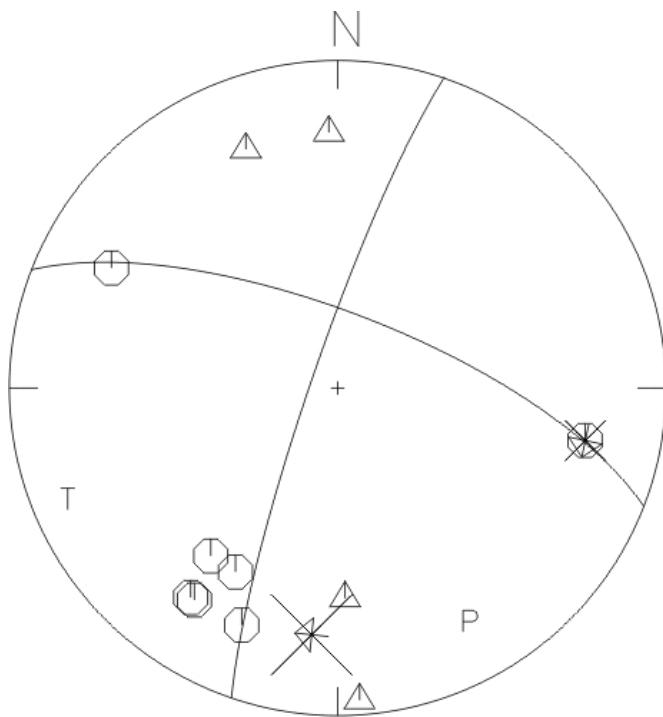


Figure 6. Equal area projection of the upper focal hemisphere for the Coniston earthquake 21 December 2010. The axes of maximum and minimum compressive stress are denoted by P and T respectively.

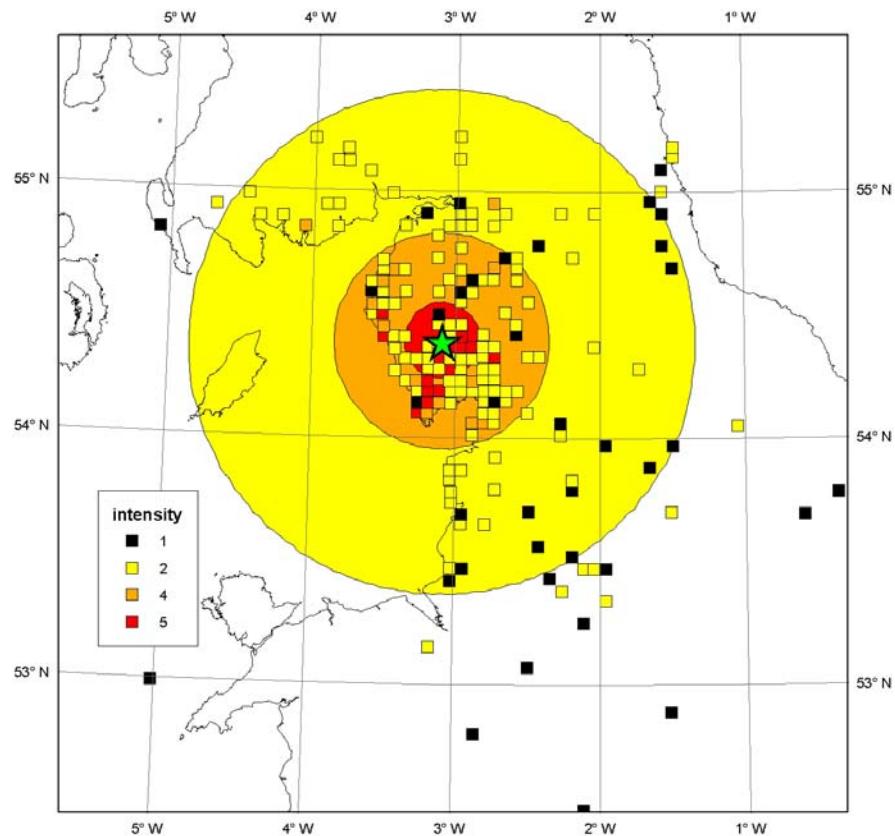


Figure 7. Macroseismic map of the Coniston earthquake, 21 December 2010.

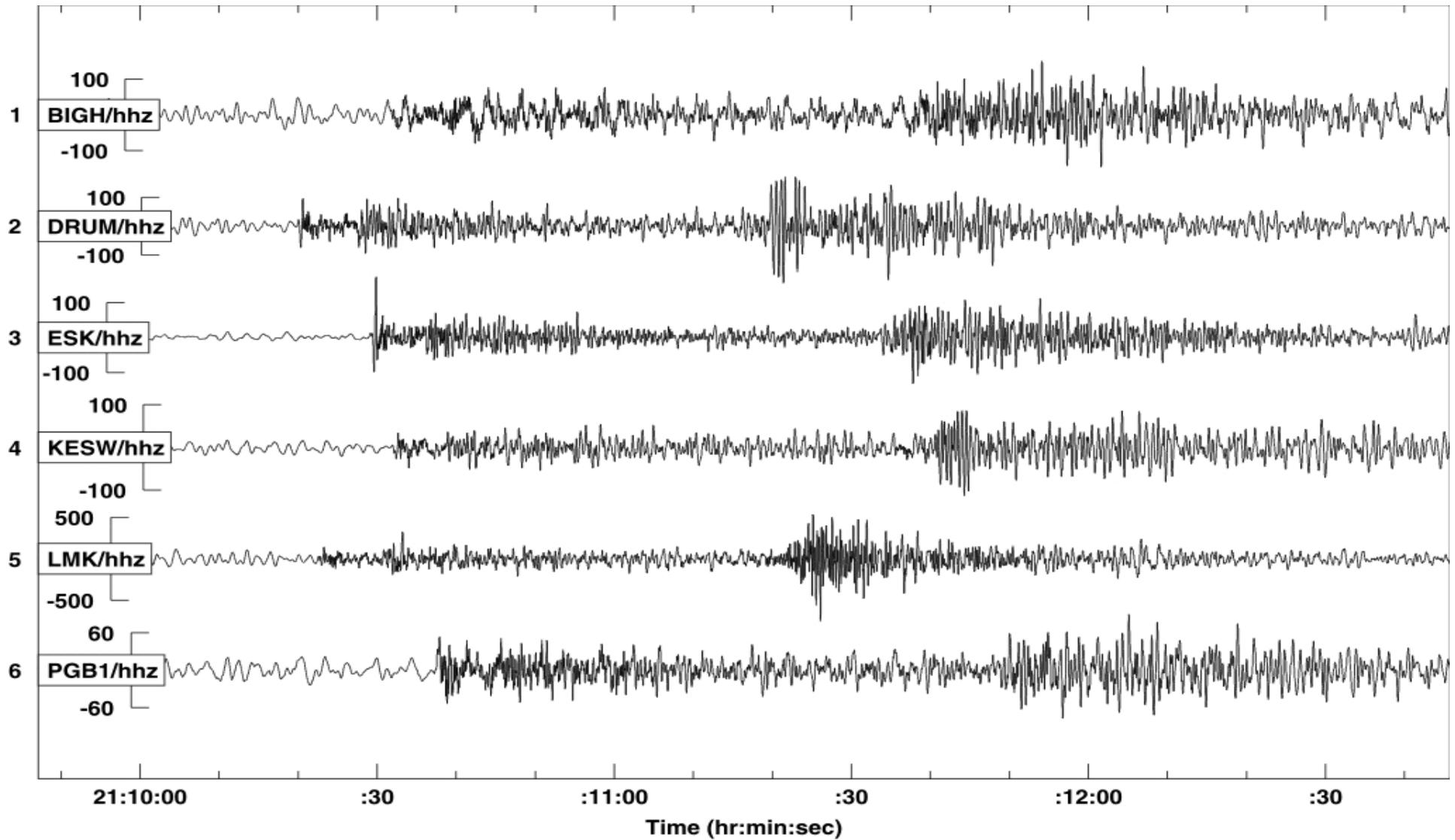


Figure 8. Seismograms of the ground displacement from the magnitude 4.8 ML Eastern North Sea earthquake, 19 February 2010, recorded by BGS seismograph stations.

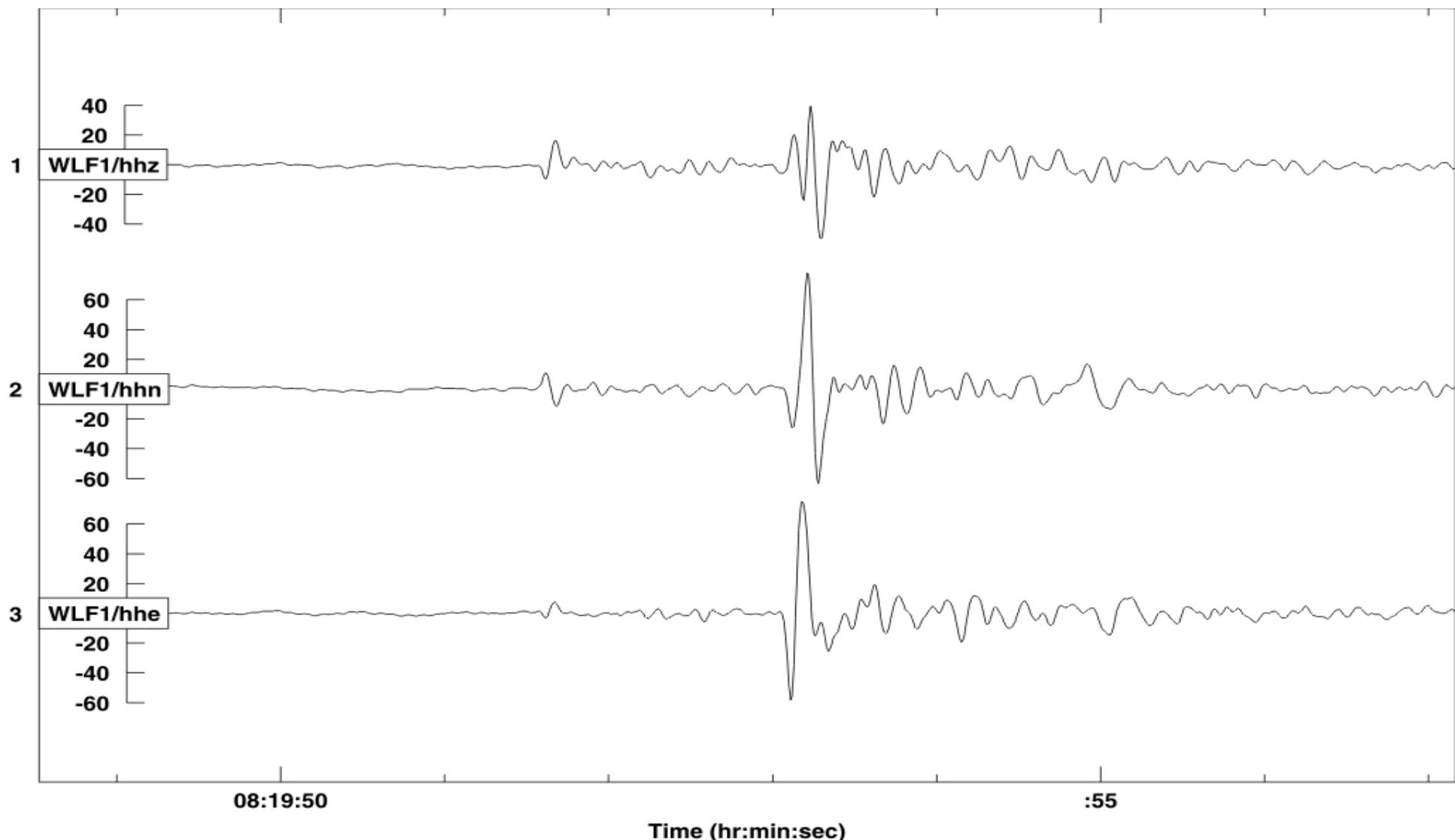


Figure 9. Seismograms of the ground displacement from the magnitude 1.0 ML Isle of Anglesey earthquake, 1 February 2010, recorded by BGS seismograph stations.

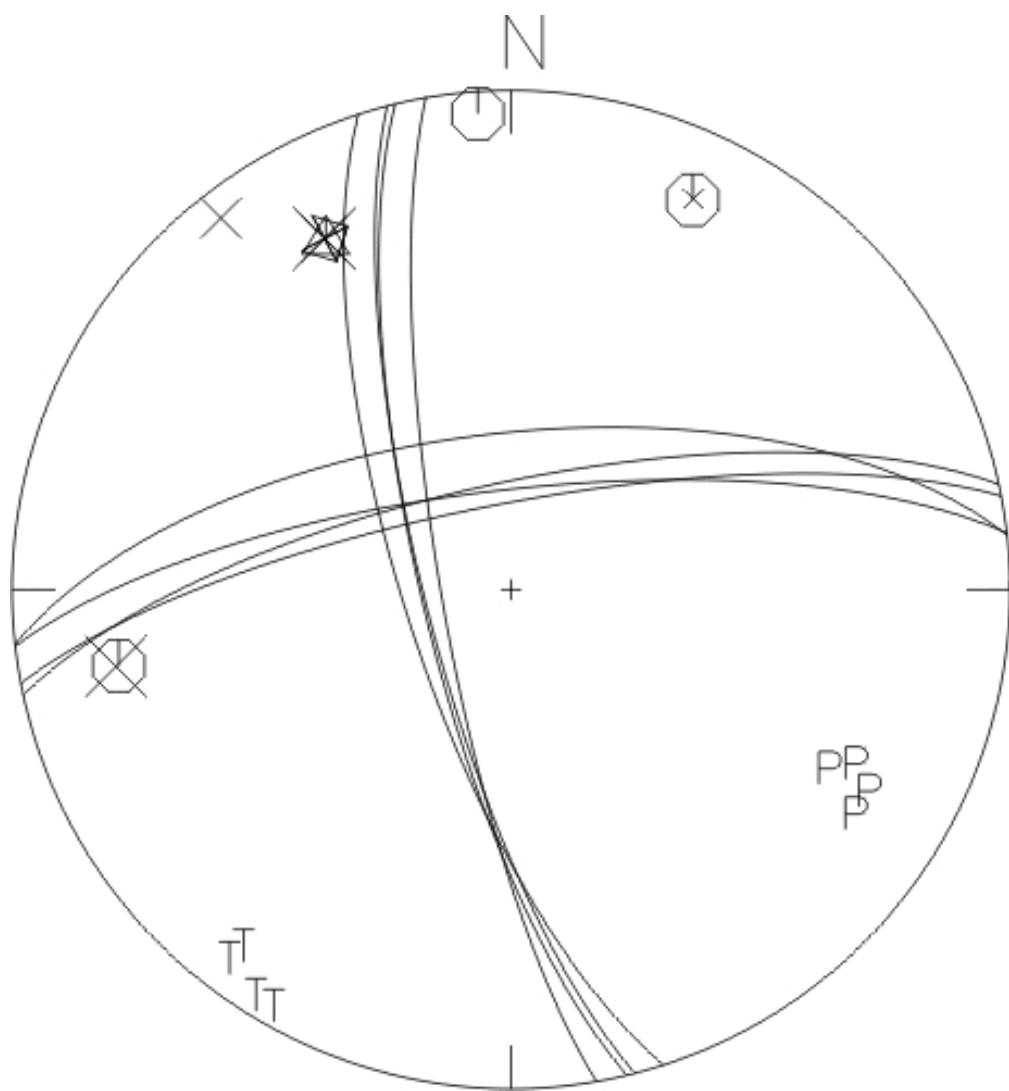


Figure 10. Equal area projection of the upper focal hemisphere for the Isle of Anglesey earthquake 1 February 2010. The axes of maximum and minimum compressive stress are denoted by P and T respectively.

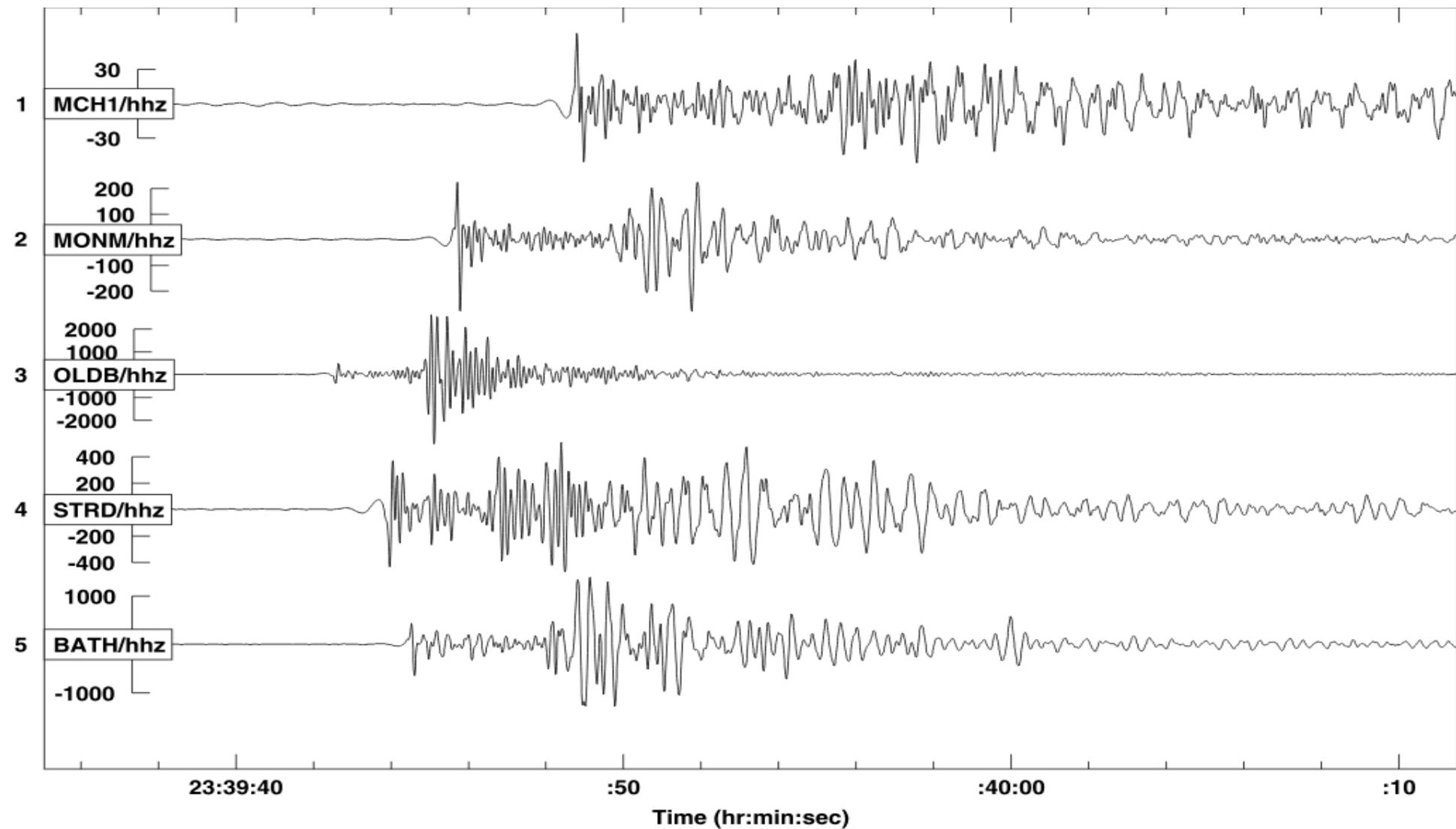


Figure 11. Seismograms of the ground displacement from the magnitude 2.7 ML Stroud, Gloucestershire earthquake, 30 July 2010, recorded by BGS seismograph stations.

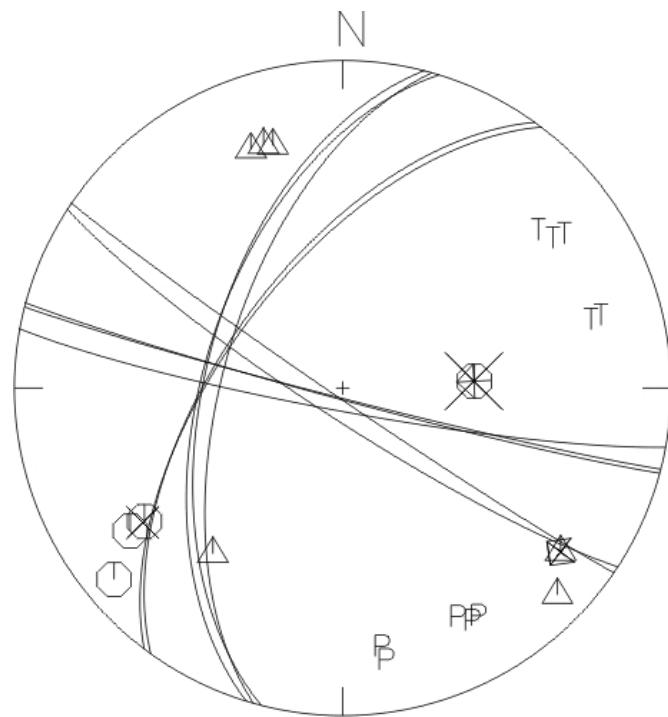


Figure 12. Equal area projection of the upper focal hemisphere for the Stroud, Gloucestershire earthquake 30 July 2010. The axes of maximum and minimum compressive stress are denoted by P and T respectively.

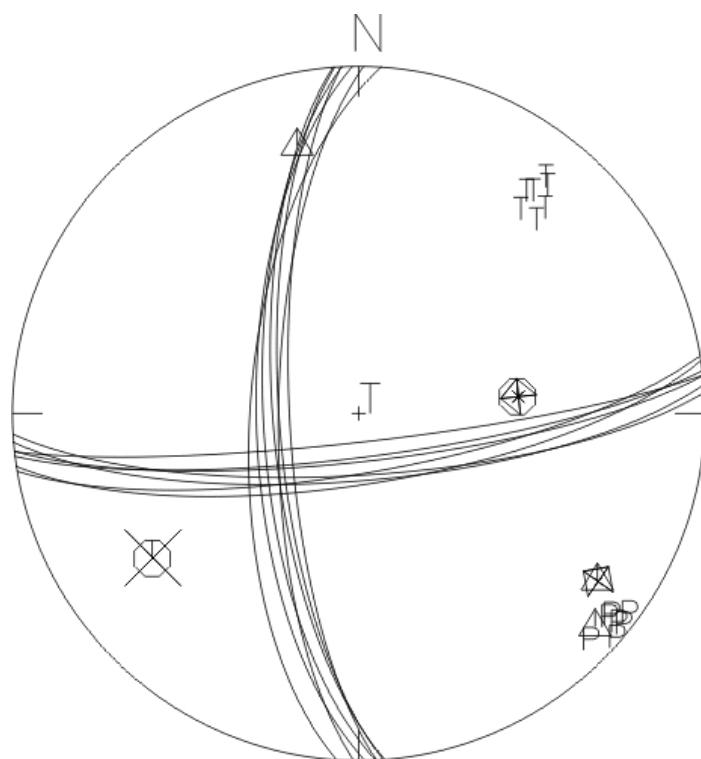


Figure 13. Equal area projection of the upper focal hemisphere for the Stroud, Gloucestershire earthquake 9 August 2010. The axes of maximum and minimum compressive stress are denoted by P and T respectively.

TABLE 1 : CATALOGUE OF EVENTS : 2010

Year	Mo	Dy	Hr	Mn	Secs	Lat	Lon	kmE	kmN	Dep	Mag	Locality	Int	No	Gap	RMS	ERH	ERZ	Comments
2010	01	07	19	30	14.4	55.03	-7.40	55.2	584.3	9.6	1.6	COUNTY DONEGAL, IRELAND	3	5	290	0.60	1.64	2.40	FELT COUNTY DONEGAL
2010	01	08	21	19	14.0	55.23	-3.50	304.7	594.3	2.6	0.9	JOHNSTONEBRIDGE, D & G		9	76	0.40	4.25	7.30	
2010	01	08	22	18	40.9	55.26	-3.49	305.2	596.7	3.2	0.5	JOHNSTONEBRIDGE, D & G		5	188	0.20	4.00	4.60	
2010	01	12	13	37	02.2	52.55	-3.96	267.3	296.4	5.0	1.4	FURNACE, CEREDIGION		7	138	0.30	3.98	1.80	
2010	01	12	16	18	27.5	56.01	-5.84	160.5	686.1	5.8	1.9	JURA, ARGYLL & BUTE		8	214	0.40	0.09	8.90	
2010	01	12	20	47	51.4	55.08	-7.39	56.3	589.2	10.7	1.5	COUNTY DONEGAL, IRELAND	3	4	291	0.40	4.12	1.20	FELT COUNTY DONEGAL
2010	01	12	20	04	212.2	53.02	-2.18	387.9	347.3	1.3	1.8	STOKE-ON-TRENT, STAFFS		15	120	0.40	4.61	2.70	
2010	01	12	20	07	5121.7	55.06	-7.39	55.8	586.8	9.2	1.7	COUNTY DONEGAL, IRELAND	3	3	328	0.60	2.05	0.00	FELT COUNTY DONEGAL
2010	01	12	06	17	5174.7	53.02	-2.17	388.9	346.5	1.4	1.8	STOKE-ON-TRENT, STAFFS		11	141	0.50	5.73	3.50	
2010	01	13	19	08	57.8	53.03	-2.50	366.3	348.1	7.0	1.3	NANTWICH, CHESHIRE		11	105	0.40	3.85	7.80	
2010	01	20	08	19	49.4	53.38	-4.47	235.4	389.6	5.2	1.0	ISLE OF ANGLESEY		9	175	0.10	1.64	2.00	
2010	01	20	08	32	230.9	56.24	-3.77	290.3	706.7	1.8	1.8	BLACKFORD, PERTH/KINROSS	3	12	94	0.40	4.12	3.30	FELT BLACKFORD
2010	01	20	15	22	51.7	56.24	-3.73	292.7	706.3	2.3	1.6	BLACKFORD, PERTH/KINROSS		13	96	0.40	4.79	3.90	
2010	01	20	13	32	211.6	51.20	-4.58	219.6	147.4	18.9	2.2	BRISTOL CHANNEL		11	193	0.30	5.07	2.30	10KM EAST OF LUNDY
2010	01	20	13	17	47.6	51.96	-4.28	243.3	231.1	7.9	1.2	RHOS, CARMARTHENSHIRE		8	165	0.30	4.12	4.00	7KM SE OF RHOS
2010	01	20	02	10	52334.9	50.76	-2.92	335.0	95.8	9.2	2.2	LYME REGIS, DORSET		13	182	0.40	5.17	5.60	
2010	01	20	07	09	5252.8	58.85	0.86	565.1	999.8	15.6	2.0	NORTHERN NORTH SEA		6	273	0.50	5.26	0.00	200KM EAST OF ORKNEY
2010	01	21	21	09	01.0	56.88	7.42	973.0	816.5	26.8	4.8	EASTERN NORTH SEA	4	43	194	0.70	6.86	9.30	FELT DENMARK
2010	01	22	12	08	224.9	51.48	-2.01	399.4	175.3	22.9	2.0	CHIPPENHAM, WILTSHIRE		11	122	0.30	3.00	2.00	
2010	01	30	21	44	06.5	50.98	-3.76	276.3	121.8	12.5	1.4	SOUTH MOLTON, DEVON		9	129	0.20	2.86	2.10	
2010	01	30	03	29	40.9	57.27	-3.99	280.2	821.9	2.7	1.6	CARRBRIDGE, HIGHLAND		14	76	0.30	3.30	3.40	
2010	01	31	06	22	29.0	53.42	-4.56	230.1	395.1	10.1	0.5	ISLE OF ANGLESEY		6	277	0.20	7.19	5.60	OFFSHORE LOCATION
2010	01	31	01	45	21.7	53.86	-3.62	293.8	441.8	4.1	1.7	IRISH SEA		20	104	0.40	4.14	6.20	40KM WNW OF BLACKPOOL
2010	01	32	08	34	49.0	49.16	-3.25	308.9	-81.9	8.2	2.2	ENGLISH CHANNEL		7	223	0.40	1.53	5.10	70KM WEST OF JERSEY
2010	01	40	10	14	38.5	61.88	3.49	688.2	1345.7	10.0	3.3	NORTHERN NORTH SEA		4	340	0.60	8.95	0.00	300KM NE OF LERWICK
2010	01	41	05	47	56.2	57.35	-6.70	117.4	839.0	2.7	1.3	ISLE OF SKYE		7	259	0.30	6.73	5.40	
2010	01	42	04	36	43.5	52.80	-2.22	385.2	322.9	3.1	1.4	GNOSSL, STAFFORDSHIRE		9	176	0.50	7.91	2.90	
2010	01	42	06	08	52.5	53.26	-1.20	453.7	373.4	1.1	1.7	WORKSOP, NOTTS	3	5	250	0.30	5.22	5.30	FELT EDWINSTOWE
2010	01	42	05	18	32.8	52.91	-2.23	384.7	334.6	5.8	1.3	STONE, STAFFORDSHIRE		11	148	0.30	3.98	4.60	6KM WEST OF STONE
2010	01	50	20	01	57.1	54.32	-2.46	369.9	491.4	7.7	1.9	SEDBERGH, CUMBRIA		14	72	0.40	4.03	5.20	
2010	01	50	23	07	23.0	54.11	-2.52	365.7	468.5	8.9	1.8	BENTHAM, N YORKSHIRE		13	66	0.30	3.89	6.90	
2010	01	50	22	24	00.6	52.85	-9.36	-95.5	353.2	4.7	2.7	COUNTY CLARE, IRELAND	3	14	186	1.20	2.33	0.00	FELT COUNTY CLARE
2010	01	50	07	15	07.0	54.35	-1.73	417.4	495.1	7.2	1.8	RICHMOND, N YORKSHIRE		10	150	0.20	3.51	6.10	
2010	01	52	23	53	17.3	56.32	-5.35	193.1	719.0	15.5	1.2	OBAN, ARGYLL & BUTE		8	185	0.30	7.75	3.70	12KM SE OF OBAN
2010	01	52	23	14	52.5	55.93	-4.37	251.9	672.9	2.2	1.5	CLYDEBANK, STRATHCLYDE		12	155	0.40	3.69	9.50	
2010	01	52	29	23	72.5	57.41	-5.56	186.2	840.9	3.4	1.0	LOCHCARRON, HIGHLAND		5	201	0.30	5.61	0.00	
2010	01	52	29	16	05.5	55.94	-4.39	250.8	674.1	4.2	1.9	CLYDEBANK, STRATHCLYDE		10	131	0.30	7.20	6.90	
2010	01	60	07	16	03.2	59.12	1.98	627.7	1033.2	18.2	2.7	NORTHERN NORTH SEA		10	177	0.30	6.89	7.50	
2010	01	60	07	17	33.9	55.11	-3.62	296.7	580.3	4.7	2.3	DUMFRIES, D & G	3	13	100	0.50	5.05	7.00	FELT DUMFRIES...
2010	01	60	07	17	45.9	55.13	-3.65	294.5	582.7	6.8	0.8	DUMFRIES, D & G		6	113	0.20	3.08	5.20	
2010	01	61	19	17	43.8	53.43	-0.67	488.1	393.6	8.8	2.7	GAINSBOROUGH, LINCS		9	125	0.30	5.45	7.50	7KM NE OF GAINSBOROUGH
2010	01	62	01	50	43.3	52.49	-1.70	420.1	288.5	10.3	2.3	BIRMINGHAM, W MIDLANDS		13	125	0.20	2.02	2.50	
2010	01	62	05	55	34.5	51.23	-2.00	400.1	147.7	2.7	1.5	WARMINSTER, WILTSHIRE		10	214	0.40	6.66	3.80	15KM EAST OF WARMINSTER
2010	01	62	08	20	45.8	53.51	-0.64	490.4	402.7	9.3	1.9	SCUNTHORPE, NORTH LINCS		6	159	0.40	9.76	3.90	7KM SOUTH OF SCUNTHORPE
2010	01	63	00	35	32.2	53.58	-1.06	462.2	410.1	1.5	2.0	DONCASTER, S YORKSHIRE	4	10	118	0.40	2.70	3.10	C/F, FELT DONCASTER
2010	01	63	00	51	10.9	52.98	-4.41	238.3	344.8	4.6	1.1	LLEYN PENINSULA		4	290	0.20	4.97	4.40	
2010	01	70	11	33	06.2	56.58	-5.62	177.8	749.3	7.6	1.5	LOCHALINE, HIGHLAND		7	218	0.20	3.49	0.00	9KM ENE OF LOCHALINE
2010	01	72	14	52	33.6	52.44	-4.71	216.1	285.8	4.7	1.2	CARDIGAN BAY		11	191	0.30	9.58	7.80	40KM WEST OF ABERYSTWYTH

TABLE 1 : CATALOGUE OF EVENTS : 2010

Year	Mo	Dy	Hr	Mn	Secs	Lat	Lon	kmE	kmN	Dep	Mag	Locality	Int	No	Gap	RMS	ERH	ERZ	Comments	
2010	07	14	100	942	.2	57.09	-5.77	171.7	805.8	3.7	1.3	KNOYDART, HIGHLAND	7	305	0.30	7.34	7.70			
2010	07	15	102	239	.7	51.90	-0.64	493.6	222.9	14.3	2.0	DUNSTABLE, BEDFORDSHIRE	7	307	0.30	2.57	2.50	8KM WEST OF DUNSTABLE		
2010	07	20	193	548	.1	50.09	-2.23	383.8	21.8	5.0	1.4	ENGLISH CHANNEL	6	229	0.60	7.13	0.00	60KM SSE OF WEYMOUTH		
2010	07	27	015	616	.9	53.61	-2.41	372.7	412.9	12.3	1.9	BOLTON, LANCASHIRE	15	82	0.30	2.91	3.80			
2010	07	30	211	710	.5	57.12	-5.24	203.8	807.3	6.2	1.5	GLEN SHEIL, HIGHLAND	11	163	0.30	4.78	4.60			
2010	07	30	233	939	.9	51.67	-2.42	370.8	196.9	11.4	2.7	STROUD, GLOUCESTERSHIRE	3	20	55	0.40	2.61	2.40	FELT STROUD	
2010	08	04	000	250	.8	54.36	-2.88	342.8	496.3	3.5	1.7	WINDERMERE, CUMBRIA	3	19	73	0.40	6.71	2.10	FELT STAVELEY, KENDAL	
2010	08	06	033	901	.7	54.11	-2.53	365.4	468.6	8.1	1.5	BENTHAM, N YORKSHIRE	14	65	0.40	4.38	7.50			
2010	08	09	112	635	.3	51.67	-2.41	371.6	196.9	14.2	1.5	STROUD, GLOUCESTERSHIRE	7	97	0.20	2.30	2.90			
2010	08	22	185	124	.5	52.56	-4.23	248.6	298.0	7.4	1.7	CARDIGAN BAY, WALES	13	174	0.20	2.66	3.20			
2010	08	26	070	135	.9	57.08	-4.34	258.1	801.6	7.4	1.8	KINGUSSIE, HIGHLAND	8	184	0.30	3.61	9.10	16KM WEST OF KINGUSSIE		
2010	08	27	131	653	.7	57.22	-5.61	182.1	820.3	4.2	1.2	GLENELG, HIGHLAND	10	224	0.30	7.74	3.40			
2010	08	28	161	258	.9	53.94	-1.25	449.1	449.6	6.1	1.6	TADCASTER, N YORKSHIRE	6	191	0.20	3.92	3.10	6KM NORTH OF TADCASTER		
2010	08	31	092	028	.6	54.31	-1.90	406.2	490.5	8.8	1.6	LEYBURN, N YORKSHIRE	7	125	0.20	2.59	4.90			
2010	09	01	054	555	.7	57.02	1.97	641.2	798.7	15.0	3.5	CENTRAL NORTH SEA	3	27	228	0.50	0.47	0.00	FELT ONBOARD VESSEL	
2010	09	01	221	035	.8	53.18	-4.19	253.5	366.6	15.2	1.1	BANGOR, GWYNEDD	3	7	112	0.50	6.94	5.90	FELT BANGOR, CAERNARFON...	
2010	09	03	081	350	.7	54.25	-2.66	356.9	484.0	9.7	2.4	KENDAL, CUMBRIA	3	24	113	0.50	6.40	7.80	FELT STAVELEY, KENDAL	
2010	09	07	002	825	.1	54.86	-2.95	339.1	552.0	7.8	0.8	CARLISLE, CUMBRIA	6	216	0.20	7.48	1.90			
2010	09	07	232	141	.7	53.45	-1.15	456.3	394.9	1.1	2.2	DONCASTER, S YORKSHIRE	3	12	117	0.30	2.95	2.60	C/F, FELT ROSSINGTON	
2010	09	10	120	525	.0	51.83	-3.02	329.6	214.7	25.6	1.6	ABERGAVENNY, GWENT	10	82	0.20	3.33	2.60			
2010	09	12	051	456	.1	51.71	-3.40	303.5	202.3	9.8	1.3	ABERDARE, MID GLAMORGAN	6	180	0.10	1.92	1.50			
2010	09	13	103	118	.7	58.69	0.82	563.7	981.4	10.3	2.5	NORTHERN NORTH SEA	16	241	0.30	3.05	8.40	200KM SSE OF LERWICK		
2010	09	19	082	924	.0	56.07	-3.96	278.2	688.4	8.6	1.2	DENNY, FALKIRK	8	105	0.30	3.89	7.50	7KM NNW OF DENNY		
2010	09	25	231	725	.8	57.09	-4.33	259.1	801.8	7.1	1.7	NEWTONMORE, HIGHLAND	9	102	0.20	3.42	0.50	12KM WEST OF NEWTONMORE		
2010	09	27	053	216	.9	52.05	-0.79	483.1	239.9	4.4	1.9	MILTON KEYNES, BUCKS	11	149	0.30	4.62	6.40			
2010	09	28	033	203	.1	60.15	-0.53	481.5	1140.2	3.5	1.3	SHETLAND ISLANDS	3	328	0.10	3.11	5.60	35KM EAST OF LERWICK		
2010	10	15	054	953	.4	53.26	-1.04	464.2	373.7	6.1	1.7	WORKSOP, NOTTS	6	244	0.30	1.21	9.60			
2010	10	17	071	747	.6	57.20	-5.62	181.4	818.5	2.7	0.6	GLENELG, HIGHLAND	4	265	0.10	7.18	2.50			
2010	10	21	223	004	.2	52.91	-1.21	453.4	334.8	6.8	1.9	BEESTON, NOTTS	10	156	0.20	2.75	3.50			
2010	10	22	012	249	.2	53.30	-2.34	377.1	377.6	17.2	1.2	KNUTSFORD, CHESHIRE	7	160	0.20	3.09	2.10			
2010	10	23	085	801	.1	53.30	-2.35	376.8	378.8	16.7	1.2	KNUTSFORD, CHESHIRE	6	162	0.20	2.59	1.90			
2010	10	25	041	223	.7	53.63	-1.01	465.7	415.9	1.4	1.8	THORNE, S YORKSHIRE	7	162	0.40	4.24	4.20	C/F		
2010	10	25	230	933	.1	56.56	-6.20	141.8	748.7	8.0	1.4	MULL, ARGYLL & BUTE	6	254	0.20	8.36	2.10			
2010	11	04	074	747	.8	61.30	3.75	707.7	1282.0	15.0	3.0	NORWEGIAN SEA	11	158	1.00	6.48	4.80			
2010	11	18	140	453	.7	53.16	-4.08	261.2	365.1	4.3	0.7	BETHESDA, GWYNEDD	7	112	0.10	1.28	1.30			
2010	11	26	075	034	.8	55.25	-3.48	306.2	595.8	5.1	0.8	JOHNSTONEBRIDGE, D & G	4	183	0.20	2.61	4.50			
2010	11	26	175	709	.2	55.23	-3.49	305.5	593.8	4.6	1.4	JOHNSTONEBRIDGE, D & G	7	110	0.30	3.34	5.30			
2010	11	26	181	927	.6	55.25	-3.48	306.2	595.6	4.3	0.2	JOHNSTONEBRIDGE, D & G	4	183	0.10	2.02	6.80			
2010	12	20	024	849	.4	55.83	-6.32	129.6	668.5	9.3	1.4	ISLAY, ARGYLL & BUTE	5	238	0.50	5.18	3.70			
2010	12	20	015	328	.2	53.98	0.87	588.2	457.8	14.8	2.6	SOUTHERN NORTH SEA	15	252	0.20	7.77	4.20			
2010	12	20	082	728	.8	55.25	-3.48	306.2	596.0	5.3	0.7	JOHNSTONEBRIDGE, D & G	4	184	0.20	3.33	5.70			
2010	12	24	123	435	.3	52.08	-3.40	304.3	242.8	4.3	1.0	BUILTH WELLS, POWYS	6	153	0.10	1.14	3.20			
2010	12	24	185	215	.9	54.76	-3.15	325.9	541.0	4.2	0.6	WIGTON, CUMBRIA	6	174	0.30	3.83	3.10			
2010	12	25	102	725	.2	50.01	-0.56	503.4	12.9	5.0	2.2	ENGLISH CHANNEL	6	188	0.60	0.21	0.00	95KM SSW OF BRIGHTON		
2010	12	25	140	945	.1	49.87	-0.50	507.9	-2.0	5.0	1.5	ENGLISH CHANNEL	4	311	0.40	1.31	0.00	105KM SSW OF BRIGHTON		
2010	12	28	061	909	.0	57.46	-5.94	164.0	848.1	3.7	2.2	APPLECROSS, HIGHLAND	16	165	0.50	8.95	6.60	8KM NW OF APPLECROSS		
2010	12	29	004	325	.0	59.87	5.07	795.2	1130.6	10.0	3.4	NORWEGIAN COAST	14	304	0.40	7.68	0.00			
2010	12	29	123	013	.6	59.91	5.01	791.5	1135.0	10.0	3.8	NORWEGIAN COAST	17	303	0.50	7.90	0.00			

TABLE 1 : CATALOGUE OF EVENTS : 2010

Year	Mo	Dy	Hr	Mn	Secs	Lat	Lon	kmE	kmN	Dep	Mag	Locality	Int	No	Gap	RMS	ERH	ERZ	Comments
2010	1	22	1	25	912.7	54.39	-3.15	325.6	500.0	12.6	3.5	CONISTON, CUMBRIA	5	30	174	0.60	7.98	4.90	FELT CUMBRIA ...
2010	1	22	0	51	310.5	57.12	6.73	927.6	836.9	23.6	3.5	EASTERN NORTH SEA		13	307	0.30	7.79	6.70	530KM EAST OF ABERDEEN
2009	0	10	1	45	420.8	55.07	-3.63	296.0	575.9	3.1	1.1	DUMFRIES, D & G		9	149	0.40	3.91	0.80	

TABLE 2 : PHASE DATA

January 7 2010	Time: 19:30 14.4 UTC	Magnitude: 1.6 ML	PGB1	HZ	87.8	EP	16:18	42.30	0.22
Lat: 55.033N	Lon: -7.398W	Depth: 9.6 km	PGB1	HN	87.8	ES	16:18	52.42	-0.32
Grid Ref: 55.19 kmE 584.28 kmN		RMS: 0.60 secs	PGB1	HN	87.8	AML	16:18	54.96	27 0.32
Locality: COUNTY DONEGAL,IRELAND			PGB1	HE	87.8	AML	16:18	56.14	42 0.46
Velocity model: Lownet Xnear: 200.0 Xfar: 300.0			EAB	SZ	95.8	EP	16:18	43.00	-0.34
Comment: FELT COUNTY DONEGAL		Intensity: 3	GAL1	HZ	146.0	EP	16:18	50.98	0.14
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES			GAL1	HE	146.0	ES	16:19	07.27	-0.63
GMM SZ 129.0 EP 19:30 34.30		-0.14	GAL1	HE	146.0	AML	16:19	09.22	35 0.48
GAL1 HZ 173.0 EP 19:30 40.27		0.09	GAL1	HN	146.0	AML	16:19	09.45	18 0.50
GAL1 HN 173.0 ES 19:30 59.23		0.20	KPL	HZ	149.0	EP	16:18	51.09	-0.12
GAL1 HN 173.0 AML 19:31 04.06	6 0.32		KPL	HE	149.0	AML	16:19	08.24	-0.30
PGB1 HZ 204.0 EP 19:30 44.50		0.46	KPL	HN	149.0	ES	16:19	10.49	33 0.30
PGB1 HN 204.0 ES 19:31 05.40		-0.31	EDI	HN	166.0	AML	16:19	03.02	17 0.42
PGB1 HN 204.0 AML 19:31 10.59	6 0.48		EDI	HE	166.0	AML	16:19	06.01	11 0.48
PGB1 HE 204.0 AML 19:31 14.47	8 0.70		KAC	SZ	169.0	EP	16:18	54.47	0.28
ESK HZ 269.0 EP 19:30 49.88		-2.32	EBL	SZ	177.0	EP	16:18	56.05	0.84
ESK HN 269.0 ES 19:31 19.71		-0.10	ESK	HZ	183.0	EP	16:18	56.15	0.24
ESK HE 269.0 AML 19:31 31.93	3 0.64		ESK	HN	183.0	ES	16:19	17.39	0.71
ESK HN 269.0 AML 19:31 33.97	4 0.74		ESK	HN	183.0	AML	16:19	19.74	25 0.30
WLF1 HZ 276.0 EP 19:30 52.05		-0.95	ESK	HE	183.0	AML	16:19	21.33	21 0.46
WLF1 HN 276.0 ES 19:31 21.43		0.22							
WLF1 HE 276.0 AML 19:31 30.57	2 0.56								
WLF1 HE 276.0 AML 19:31 32.62	2 0.78								
January 8 2010	Time: 21:19 14.0 UTC	Magnitude: 0.9 ML	January 26 2010	Time: 20:47 51.4 UTC	Magnitude: 1.5 ML				
Lat: 55.234N	Lon: -3.498W	Depth: 2.6 km	Lat: 55.078N	Lon: -7.387W	Depth: 10.7 km				
Grid Ref: 304.75 kmE 594.34 kmN		RMS: 0.40 secs	Grid Ref: 56.28 kmE 589.22 kmN		RMS: 0.40 secs				
Locality: JOHNSTONEBRIDGE,D & G			Locality: COUNTY DONEGAL,IRELAND						
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0			Velocity model: Lownet Xnear: 200.0 Xfar: 300.0						
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES			Comment: FELT COUNTY DONEGAL		Intensity: 3				
BWH SZ 11.9 EP 21:19 16.84		0.27	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES						
ESK HZ 20.7 EP 21:19 17.80		-0.27	GAL1 HZ 173.0 EP 20:48 17.07		-0.31				
ESK HE 20.7 AML 21:19 17.93	18 0.10		GAL1 HN 173.0 ES 20:48 36.54		0.16				
ESK HE 20.7 ES 21:19 20.41		-0.60	GAL1 HE 173.0 AML 20:48 41.89	6 0.26					
ESK HN 20.7 AML 21:19 21.48	18 0.20		PGB1 HZ 201.0 EP 20:48 21.26		0.35				
BHH SZ 23.8 EP 21:19 18.73		0.16	PGB1 HN 201.0 ES 20:48 42.28		-0.21				
BHH SE 23.8 ES 21:19 21.75		-0.13	PGB1 HN 201.0 AML 20:48 50.96	6 0.34					
BHH SE 23.8 AML 21:19 21.90	66 0.32		PGB1 HE 201.0 EP 20:48 57.34	5 0.84					
BHH SN 23.8 AML 21:19 21.90	58 0.18		ESK HZ 268.0 EP 20:48 29.44		0.20				
EBL SZ 66.4 EP 21:19 25.59		-0.01	ESK HN 268.0 ES 20:48 57.00		0.10				
KESW HZ 76.2 EP 21:19 27.31		0.23	ESK HE 268.0 AML 20:49 10.72	3 0.72					
KESW HZ 76.2 ES 21:19 36.97		0.37	ESK HE 268.0 ES 20:49 10.95	2 0.66					
KESW HE 76.2 AML 21:19 39.42	5 0.36		WLF1 HZ 279.0 EP 20:48 29.45		-1.14				
KESW HN 76.2 AML 21:19 39.57	4 0.62		WLF1 HZ 279.0 ES 20:48 59.95		0.71				
GALL HZ 87.7 EP 21:19 28.63		-0.21	WLF1 HE 279.0 AML 20:49 01.24		2 0.68				
GALL HN 87.7 ES 21:19 38.77		-0.87	WLF1 HE 279.0 ES 20:49 16.28	1 0.62					
GALL HN 87.7 AML 21:19 40.11	6 0.28								
GALL HE 87.7 AML 21:19 40.21	3 0.20								
PGB1 HZ 89.5 EP 21:19 29.65		0.52	January 27 2010	Time: 00:42 12.2 UTC	Magnitude: 1.8 ML				
PGB1 HE 89.5 ES 21:19 40.10		-0.04	Lat: 53.023N	Lon: -2.180W	Depth: 1.3 km				
PGB1 HN 89.5 AML 21:19 42.53	6 0.38		Grid Ref: 387.93 kmE 347.35 kmN		RMS: 0.40 secs				
PGB1 HE 89.5 AML 21:19 42.82	9 0.24		Locality: STOKE-ON-TRENT,STAFFS						
ESY SZ 94.3 EP 21:19 30.19		0.29	Velocity model: Lownet Xnear: 125.0 Xfar: 250.0						
EAB SZ 119.0 EP 21:19 34.07		0.41	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES						
January 8 2010	Time: 22:18 40.9 UTC	Magnitude: 0.5 ML	STNC HZ 7.8 IP D 00:42 13.84		-0.34				
Lat: 55.255N	Lon: -3.492W	Depth: 3.2 km	STNC HE 7.8 ES 00:42 15.33		-0.30				
Grid Ref: 305.18 kmE 596.67 kmN		RMS: 0.20 secs	STNC HN 7.8 AML 00:42 15.38 1041 0.16						
Locality: JOHNSTONEBRIDGE,D & G			STNC HE 7.8 AML 00:42 15.65 1472 0.40						
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0									
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES									
BWH SZ 13.6 EP 22:18 43.94		0.03	KBI1 SZ 50.7 IP C 00:42 21.07		-0.44				
ESK HZ 19.5 EP 22:18 44.89		0.09	LHO EZ 62.0 EP 00:42 23.06		-0.25				
ESK HN 19.5 ES 22:18 47.42		-0.24	FOEL HZ 70.1 EP 00:42 24.53		-0.03				
ESK HE 19.5 AML 22:18 47.64	6 0.10		FOEL HN 70.1 ES 00:42 33.74		0.14				
ESK HE 19.5 AML 22:18 48.63	6 0.20		FOEL HE 70.1 AML 00:42 40.64 11 0.44						
BHH SZ 25.1 EP 22:18 45.85		0.19	FOEL HE 70.1 ES 00:42 41.00 19 0.42						
BHH SN 25.1 ES 22:18 48.82		-0.32	HLM1 HZ 73.4 EP 00:42 24.75		-0.32				
BHH SE 25.1 AML 22:18 49.00	19 0.32		HLM1 HN 73.4 ES 00:42 34.10		-0.38				
BHH SN 25.1 AML 22:18 49.01	18 0.18		HLM1 HE 73.4 AML 00:42 37.29 17 0.34						
KESW HZ 78.2 EP 22:18 54.20		0.29	HLM1 HE 73.4 ES 00:42 40.06 13 0.64						
GALL HZ 89.1 EP 22:18 55.84		0.27	HPK HZ 110.0 EP 00:42 31.78		1.01				
GALL HE 89.1 ES 22:19 05.98		-0.30	HPK HE 110.0 ES 00:42 44.12		-0.22				
GALL HE 89.1 AML 22:19 08.33	1 0.09		HPK HE 110.0 AML 00:42 47.39 73 0.16						
GALL HE 89.1 AML 22:19 08.97	3 0.46		HPK HE 110.0 ES 00:42 47.85 62 0.18						
MONM HN 138.0 AML 22:19 51.60			WPM1 SZ 118.0 EP 00:42 32.59		0.57				
MONM HN 138.0 ES 22:19 52.23			WPM1 HE 127.0 EP 00:42 33.18		-0.14				
MONM HN 138.0 EP 22:19 52.30			WPM1 HE 127.0 ES 00:42 48.30		-0.46				
MONM HN 138.0 AML 22:19 51.50			WPM1 HE 127.0 AML 00:42 51.60 15 0.18						
MONM HN 138.0 ES 22:19 51.50			WPM1 HE 127.0 ES 00:42 52.23 26 0.34						
MONM HN 138.0 EP 22:19 51.50			MONM HN 138.0 EP 00:42 35.36		0.33				
MONM HN 138.0 AML 22:19 51.50			MONM HN 138.0 ES 00:42 51.50		-0.21				
YRE SZ 151.0 EP 22:19 15.45		-0.11							
WLF1 HZ 151.0 EP 22:19 15.45									
WLF1 HN 151.0 AML 22:19 15.45									
WLF1 HE 151.0 ES 22:19 15.45									
OLDB HE 154.0 AML 22:19 15.45									
OLDB HE 154.0 ES 22:19 15.45									
OLDB HE 154.0 EP 22:19 15.45									
LPW BZ 163.0 EP 22:19 15.45									
LPW BN 163.0 ES 22:19 15.45									
LPW BE 163.0 AML 22:19 15.45									
LPW BN 163.0 ES 22:19 15.45									
LPW BE 163.0 EP 22:19 15.45									
KESW HZ 185.0 EP 22:19 15.45									
KESW HE 185.0 AML 22:19 15.45									
KESW HE 185.0 ES 22:19 15.45									
KESW HE 185.0 EP 22:19 15.45									
WPM1 SZ 78.9 EP 13:37 15.45		-0.11							
YRC SZ 88.4 EP 13:37 16.88		-0.08							
MCH1 HZ 89.7 EP 13:37 17.69		0.48							
MCH1 HN 89.7 ES 13:37 28.09		-0.04							
MCH1 HE 89.7 AML 13:37 28.64	23 0.20								
MCH1 HE 89.7 ES 13:37 29.79	11 0.12								
WPM1 SZ 78.9 EP 13:37 15.45		-0.11							
YRC SZ 88.4 EP 13:37 16.88		-0.08							
MCH1 HZ 89.7 EP 13:37 17.69		0.48							
MCH1 HN 89.7 ES 13:37 28.09		-0.04							
MCH1 HE 89.7 AML 13:37 28.64		23 0.20							
MCH1 HE 89.7 ES 13:37 29.79		11 0.12							
January 20 2010	Time: 16:18 27.5 UTC	Magnitude: 1.9 ML	January 27 2010	Time: 07:51 21.7 UTC	Magnitude: 1.7 ML				
Lat: 56.008N	Lon: -5.843W	Depth: 5.8 km	Lat: 55.056N	Lon: -7.392W	Depth: 9.2 km				
Grid Ref: 160.46 kmE 686.11 kmN		RMS: 0.40 secs	Grid Ref: 55.056N	Lon: -7.392W	RMS: 0.60 secs				
Locality: JURA,ARGYLL & BUTE			Locality: COUNTY DONEGAL,IRELAND						
Velocity model: Lownet Xnear: 150.0 Xfar: 300.0			Velocity model: Lownet Xnear: 300.0 Xfar: 500.0						
Comment: FELT COUNTY DONEGAL		Intensity: 3	Comment: FELT COUNTY DONEGAL		Intensity: 3				
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES			STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES						
GAL1 HZ 173.0 EP 07:51 48.25			GAL1 HZ 173.0 EP 07:51 48.25		0.28				
GAL1 HE 173.0 ES 07:52 06.49			GAL1 HE 173.0 ES 07:52 06.49		-0.66				
GAL1 HN 173.0 AML 07:52 12.11			GAL1 HN 173.0 AML 07:52 12.11	10 0.30					
GAL1 HE 173.0 AML 07:52 12.12	7 0.24		GAL1 HE 173.0 AML 07:52 12.12	7 0.24			</td		

TABLE 2 : PHASE DATA

PGB1	HN	202.0	ES	07:52	13.34	-0.20	YLL	SZ	33.3	AMSG	08:19	59.15	16	0.12								
PGB1	HN	202.0	AML	07:52	19.26	9 0.30	WPM1	SZ	40.2	EP	08:19	56.12		-0.14								
PGB1	HE	202.0	AML	07:52	19.72	7 0.65	YRE	SZ	44.2	IP	C	08:19	56.85	-0.05								
ESK	HZ	268.0	EP	07:51	59.93	0.03	FOEL	HZ	101.0	EP		08:20	06.35	0.03								
ESK	HN	268.0	ES	07:52	27.31	-0.49	FOEL	HE	101.0	ES		08:20	17.97	0.14								
ESK	HN	268.0	AML	07:52	37.70	4 0.86	FOEL	HE	101.0	AML		08:20	21.33	2 0.29								
ESK	HE	268.0	AML	07:52	43.06	4 0.68	FOEL	HN	101.0	AML		08:20	21.39	4 0.24								
January 28 2010				Time: 06:17 54.7 UTC			DSB	BN	128.0	ES		08:20	25.10	0.49								
Lat: 53.016N				Depth: 1.4 km			HLM1	HZ	144.0	EP		08:20	12.60	-0.27								
Grid Ref: 388.86 kmE 346.57 kmN				RMS: 0.50 secs			HLM1	HN	144.0	ES		08:20	29.63	0.80								
Locality: STOKE-ON-TRENT,STAFFS							HLM1	HN	144.0	AML		08:20	31.59	4 0.21								
							HLM1	HE	144.0	AML		08:20	33.16	3 0.27								
Velocity model: Lownet Xnear: 125.0 Xfar: 250.0																						
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	February 2 2010											
STNC	HZ	8.8	EP	06:17		56.12					Time: 08:32 30.9 UTC		Magnitude: 1.8 ML									
STNC	HE	8.8	ES	06:17		57.78					Lat: 56.240N		Lon: -3.770W									
STNC	HN	8.8	AML	06:17		57.93	1453	0.11			Grid Ref: 290.31 kmE 706.67 kmN		Depth: 1.8 km									
STNC	HE	8.8	AML	06:17		57.98	2185	0.19			Locality: BLACKFORD,PERTH/KINROS		RMS: 0.40 secs									
KB11	SZ	50.3	EP	06:18		03.47					Velocity model: Lownet Xnear: 100.0 Xfar: 200.0											
LHO	EZ	62.4	EP	06:18		05.68					Comment: FELT BLACKFORD		Intensity: 3									
FOEL	HZ	70.9	EP	06:18		06.84					STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	
FOEL	HE	70.9	ES	06:18		15.87					EAB	SZ	35.6	EP	08:32		37.54				-0.05	
FOEL	HN	70.9	AML	06:18		18.80	12	0.34			EDI	HZ	50.6	EP	9	08:32	27.06				-13.00	
FOEL	HN	70.9	AML	06:18		18.84	22	0.40			EDI	HN	50.6	AML		08:32	33.41				-0.36	
HLM1	HZ	73.4	EP	06:18		07.10					EDI	HN	50.6	AML		08:32	33.73	29	0.14			
HLM1	HE	73.4	ES	06:18		16.03					PGB1	HZ	65.3	EP		08:32	42.10				-0.28	
HLM1	HN	73.4	AML	06:18		19.88	19	0.27			PGB1	HE	65.3	ES		08:32	50.61				-0.15	
HLM1	HN	73.4	AML	06:18		22.47	16	0.27			PGB1	HE	65.3	AML		08:32	55.15	31	0.28			
HPK	HZ	111.0	EP	06:18		13.93					PGB1	HN	65.3	AML		08:32	55.17	40	0.43			
HPK	HE	111.0	ES	06:18		26.62					EBL	SZ	69.0	EP		08:32	42.85				-0.17	
HPK	HN	111.0	AML	06:18		29.84	86	0.20			ESY	SZ	80.5	EP		08:32	44.34				-0.43	
HPK	HN	111.0	AML	06:18		30.76	79	0.17			ESK	HZ	109.0	EP		08:32	49.80				0.65	
WPM1	SZ	119.0	EP	06:18		15.18					ESK	HN	109.0	ES		08:33	02.86				0.40	
MCH1	HN	127.0	EP	06:18		15.46					ESK	HE	109.0	AML		08:33	05.22	31	0.31			
MCH1	HE	127.0	ES	06:18		30.64					ESK	HN	109.0	AML		08:33	05.26	25	0.16			
MCH1	HN	127.0	AML	06:18		34.09	16	0.14			MME1	SZ	129.0	EP		08:32	52.34				-0.04	
MCH1	HE	127.0	AML	06:18		34.90	32	0.17			MDO	SZ	138.0	EP		08:32	54.12				0.40	
MONM	HZ	138.0	EP	06:18		17.70					MCD	SZ	153.0	EP		08:32	55.46				-0.27	
YRE	SZ	152.0	EP	06:18		19.52					MCD	SE	153.0	ES		08:33	13.88				0.03	
LPW	BZ	163.0	EP	06:18		21.31					MCD	SN	153.0	AML		08:33	15.31	33	0.16			
LPW	BN	163.0	ES	06:18		41.16					MCD	SE	153.0	AML		08:33	15.39	40	0.24			
LPW	BZ	163.0	AML	06:18		42.45	16	0.10			GAL1	HZ	164.0	EP		08:32	57.91				0.59	
LPW	BN	163.0	AML	06:18		42.98	14	0.30			GAL1	HE	164.0	ES		08:33	16.24				-0.35	
January 31 2010				Time: 19:08 57.8 UTC			Magnitude: 1.3 ML				GAL1				February 2 2010				Magnitude: 1.6 ML			
Lat: 53.029N				Lon: -2.502W			Depth: 7.0 km				Lat: 56.237N				Time: 15:22 51.7 UTC				Time: 08:32 30.9 UTC			
Grid Ref: 366.34 kmE 348.12 kmN				RMS: 0.40 secs			Depth: 2.3 km				Lat: 56.237N				Depth: 1.8 km				Depth: 18.9 km			
Locality: NANTWICH,CHESHIRE				Velocity model: Lownet Xnear: 100.0 Xfar: 200.0			Grid Ref: 292.66 kmE 706.28 kmN				Grid Ref: 219.55 kmE 147.43 kmN				Grid Ref: 388.86 kmE 346.57 kmN				Grid Ref: 366.34 kmE 348.12 kmN			
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	
FOEL	HZ	49.4	EP	19:09		06.53					EAB	SZ	37.9	IP	C	15:22	58.37				-0.40	
FOEL	HE	49.4	ES	19:09		12.94					EDI	HZ	48.6	EP	9	15:22	47.94				-12.60	
FOEL	HN	49.4	AML	19:09		13.46	7	0.14			EDI	HE	48.6	ES		15:22	53.89				-0.49	
HLM1	HZ	62.3	IP	D	19:09	08.18					EDI	HN	48.6	AML		15:22	54.25	21	0.10			
HLM1	HN	62.3	ES		19:09	15.79					EDI	HN	48.6	AML		15:22	55.64	16	0.40			
HLM1	HN	62.3	AML		19:09	16.80	7	0.22			PGB1	HZ	66.6	EP		15:23	02.97				-0.41	
HLM1	HN	62.3	AML		19:09	17.06	13	0.20			PGB1	HE	66.6	ES		15:23	12.10				0.21	
KB11	SZ	69.9	EP	19:09		09.38					PGB1	HE	66.6	AML		15:23	13.62	22	0.68			
LHO	EZ	71.9	EP	19:09		09.68					PGB1	HN	66.6	AML		15:23	16.43	20	0.58			
HPK	HZ	119.0	EP	19:09		17.39					EBL	SZ	67.2	EP		15:23	03.82				0.30	
HPK	HE	119.0	ES	19:09		31.23					ESY	SZ	78.1	EP		15:23	05.06				-0.14	
HPK	HN	119.0	AML	19:09		32.97	21	0.16			ESK	HZ	108.0	EP		15:23	10.58				0.82	
HPK	HE	119.0	AML	19:09		33.43	19	0.16			ESK	HE	108.0	ES		15:23	22.49				-0.43	
MCH1	HZ	120.0	EP	19:09		17.31					ESK	HE	108.0	AML		15:23	24.90	16	0.48			
MCH1	HN	120.0	ES	19:09		30.95					MME1	SZ	129.0	EP		15:23	12.87				-0.23	
MCH1	HN	120.0	AML	19:09		32.85	7	0.36			MDO	SZ	140.0	EP		15:23	14.63				-0.03	
MONM	HZ	134.0	EP	19:09		19.91					KSB	SZ	150.0	EP		15:23	16.40				0.27	
MONM	HE	134.0	ES	19:09		35.38					MCD	SZ	153.0	EP		15:23	16.30				-0.22	
MONM	HE	134.0	AML	19:09		37.10	9	0.20			MCD	SN	153.0	ES		15:23	34.41				-0.20	
MONM	HN	134.0	AML	19:09		38.02	6	0.28			MCD	SE	153.0	AML		15:23	36.40	23	0.48			
STRD	HZ	141.0	EP	19:09		21.14					MCD	SN	153.0	AML		15:23	36.70	25	0.46			
STRD	HE	141.0	ES	19:09		37.76					GAL1	HZ	165.0	EP		15:23	18.51				0.33	
LPW	BZ	147.0	EP	19:09		21.49					GAL1	HN										

TABLE 2 : PHASE DATA

LPW	BN	108.0	ES	13:32	41.01	-0.22	LRW	HN	184.0	ES	07:10	40.85	0.36	
MCH1	HZ	141.0	EP	13:32	33.62	0.10	LRW	HN	184.0	AML	07:10	49.38	10 0.60	
MCH1	HE	141.0	ES	13:32	48.89	-0.62	LRW	HE	184.0	AML	07:10	50.26	8 0.32	
MCH1	HE	141.0	AML	13:32	51.62	26 0.28	MLA1	SZ	253.0	ES	07:10	55.85	0.30	
MCH1	HN	141.0	AML	13:32	52.47	24 0.28	MCD	SE	280.0	ES	07:11	01.97	0.54	
MONM	HZ	143.0	EP	13:32	33.64	-0.05	MCD	SZ	280.0	AML	07:11	05.98	8 0.78	
MONM	HE	143.0	ES	13:32	50.17	0.37	MCD	SN	280.0	AML	07:11	18.11	11 0.56	
MONM	HE	143.0	AML	13:32	54.14	21 0.22	BIGH	HZ	280.0	EP	07:10	32.94	0.58	
MONM	HN	143.0	AML	13:32	54.94	42 0.24	BIGH	HN	280.0	ES	07:11	00.47	-0.77	
OLDB	HZ	150.0	EP	13:32	34.83	0.12	BIGH	HE	280.0	AML	07:11	03.11	12 0.14	
OLDB	HN	150.0	ES	13:32	51.86	0.30	BIGH	HN	280.0	AML	07:11	07.32	16 0.92	
BATH	HZ	160.0	EP	13:32	36.10	0.23	MME1	SZ	283.0	ES	07:11	01.75	-0.43	
BATH	HN	160.0	ES	13:32	53.79	0.22	MVH1	SZ	313.0	ES	07:11	08.40	0.01	
STRD	HZ	180.0	EP	13:32	38.77	0.33								
STRD	HN	180.0	ES	13:32	57.74	-0.28								
STRD	HE	180.0	AML	13:33	02.29	34 0.48								
STRD	HN	180.0	AML	13:33	09.19	48 0.82								
HLM1	HZ	188.0	EP	13:32	39.88	0.38								
HLM1	HN	188.0	AML	13:33	05.59	13 0.44								
HLM1	HE	188.0	AML	13:33	06.51	15 0.22								
February 19 2010 Time: 21:09 01.0 UTC Magnitude: 4.8 ML														
Lat: 56.884N Lon: 7.421W Depth: 26.8 km														
Grid Ref: 972.98 kmE 816.53 kmN RMS: 0.70 secs														
Locality: EASTERN NORTH SEA Velocity model: North Sea Xnear: 750.0 Xfar: 1500.0														
Comment: FELT DENMARK Intensity: 4														
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	KONO	BZ	333.0	EP
LPW	BE	22.9	EP	13:17	52.12		0.35				21:09	45.35	-0.15	
LPW	BN	22.9	ES	13:17	54.52	-0.27	DRUM	HZ	603.0	EP	21:10	19.68	0.66	
MCH1	HZ	88.2	EP	13:18	02.76	0.24	DRUM	HN	603.0	ES	21:11	16.04	0.08	
MCH1	HE	88.2	ES	13:18	12.94	-0.34	DRUM	HE	603.0	AML	21:11	20.65	375 0.60	
MCH1	HE	88.2	AML	13:18	13.48	4 0.33	DRUM	HN	603.0	AML	21:11	20.81	408 0.52	
MCH1	HN	88.2	AML	13:18	18.22	4 0.28	LRW	HZ	618.0	EP	21:10	21.51	0.71	
HTL	HZ	108.0	EP	13:18	05.50	-0.05	LRW	HE	618.0	ES	21:11	19.59	0.54	
HTL	HE	108.0	ES	13:18	18.37	-0.12	LRW	HE	618.0	AML	21:11	34.14	60 0.30	
HTL	HN	108.0	AML	13:18	18.80	14 0.50	LRW	HE	618.0	AML	21:11	41.32	76 0.62	
HTL	HE	108.0	AML	13:18	19.39	8 0.12	LMK	HZ	623.0	EP	21:10	22.43	0.93	
HLM1	HZ	114.0	EP	13:18	06.88	0.32	LMK	HN	623.0	ES	21:11	20.40	0.15	
HLM1	HN	114.0	ES	13:18	20.40	0.18	LMK	HE	623.0	AML	21:11	25.55	1401 0.30	
HLM1	HN	114.0	AML	13:18	23.44	6 0.14	LMK	HE	623.0	AML	21:11	29.63	894 0.32	
HLM1	HE	114.0	AML	13:18	23.70	4 0.38	ESY	SZ	628.0	EP	21:10	22.78	0.63	
YRE	SZ	115.0	EP	13:18	06.46	-0.11	MME1	SZ	631.0	EP	21:10	22.65	0.19	
YRC	SZ	146.0	EP	13:18	11.33	0.13	XAL	SZ	643.0	EP	21:10	24.25	0.25	
WPM1	SZ	147.0	EP	13:18	11.88	0.39	MCD	SZ	649.0	EP	21:10	24.83	0.16	
WLF1	HZ	149.0	EP	13:18	11.48	-0.20	MCD	SN	649.0	ES	21:11	24.99	-0.76	
WLF1	HE	149.0	ES	13:18	28.21	-0.82	MCD	SN	649.0	AML	21:11	43.53	118 0.72	
WLF1	HN	149.0	AML	13:18	29.93	8 0.14	MCD	SE	649.0	AML	21:11	43.84	136 0.56	
WLF1	HE	149.0	AML	13:18	31.02	4 0.94	EGL	SZ	658.0	EP	21:10	26.27	0.37	
February 10 2010 Time: 05:23 34.9 UTC Magnitude: 2.2 ML														
Lat: 50.758N Lon: -2.922W Depth: 9.2 km														
Grid Ref: 334.97 kmE 95.85 kmN RMS: 0.40 secs														
Locality: LYME REGIS, DORSET Velocity model: Lownet Xnear: 150.0 Xfar: 300.0														
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	KBI1	SZ	699.0	EP
HEX	SZ	70.8	EP	05:23	46.26	-0.53	MVH1	SZ	706.0	EP	21:10	32.04	0.24	
DYA	HZ	79.9	EP	05:23	47.64	-0.58	KESW	HZ	708.0	EP	21:10	31.89	-0.14	
DYA	HE	79.9	ES	05:23	57.93	0.01	KESW	HE	708.0	ES	21:11	39.14	0.66	
DYA	HN	79.9	AML	05:24	00.48	110 0.10	KESW	HN	708.0	AML	21:11	42.54	108 0.58	
DYA	HE	79.9	AML	05:24	00.81	171 0.40	MDO	SZ	715.0	EP	21:10	33.74	0.84	
BATH	HZ	86.8	EP	05:23	49.27	0.02	EAB	SZ	727.0	EP	21:10	34.89	0.53	
BATH	HE	86.8	ES	05:23	59.41	-0.30	PGB1	HZ	745.0	EP	21:10	37.17	0.58	
BATH	HN	86.8	AML	05:24	03.47	183 0.32	PGB1	HE	745.0	AML	21:11	51.69	106 0.56	
BATH	HE	86.8	AML	05:24	06.08	169 0.32	PGB1	HN	745.0	AML	21:11	51.77	106 0.34	
OLDB	HZ	104.0	ES	05:24	03.84	-0.36	ELSH	HZ	759.0	EP	21:10	39.00	0.63	
HTL	HZ	113.0	EP	05:23	53.19	-0.13	ELSH	HN	759.0	AML	21:11	58.92	128 0.52	
HTL	HN	113.0	ES	05:24	07.00	0.26	ELSH	HE	759.0	AML	21:12	12.13	166 0.58	
HTL	HE	113.0	AML	05:24	10.41	134 0.34	KAC	SZ	771.0	EP	21:10	40.09	0.24	
HTL	HN	113.0	AML	05:24	11.12	81 0.34	KSB	SZ	779.0	EP	21:10	41.09	0.19	
SWN1	HZ	115.0	EP	05:23	54.18	0.54	GAL1	HZ	791.0	EP	21:10	42.06	-0.24	
SWN1	HN	115.0	ES	05:24	07.56	0.27	GAL1	HN	791.0	ES	21:11	55.42	-0.81	
SWN1	HE	115.0	AML	05:24	10.14	49 0.28	GAL1	HE	791.0	AML	21:12	02.34	46 0.56	
SWN1	HN	115.0	AML	05:24	10.18	55 0.28	GAL1	HN	791.0	AML	21:12	13.64	72 0.44	
MONM	HZ	121.0	EP	05:23	55.20	0.78	KPL	HZ	793.0	EP	21:10	42.84	0.32	
MONM	HE	121.0	ES	05:24	08.14	-0.51	KPL	HN	793.0	ES	21:11	54.62	-1.99	
MONM	HE	121.0	AML	05:24	10.84	93 0.26	KPL	HE	793.0	AML	21:12	15.19	38 0.26	
MONM	HN	121.0	AML	05:24	11.92	57 0.70	KPL	HN	793.0	AML	21:12	16.57	48 0.36	
STRD	HZ	125.0	EP	05:23	55.36	0.29	FOEL	HZ	812.0	EP	21:10	45.09	0.07	
STRD	HN	125.0	ES	05:24	09.59	-0.19	FOEL	HE	812.0	AML	21:12	06.01	123 0.46	
STRD	HN	125.0	AML	05:24	12.21	100 0.58	FOEL	HN	812.0	AML	21:12	06.87	268 0.46	
STRD	HE	125.0	AML	05:24	12.39	64 0.16	SSW	EZ	812.0	EP	21:11	04.32	19.35	
WOL	BZ	134.0	EP	05:23	56.68	0.30	FOEL	HN	812.0	ES	21:12	02.16	1.21	
WOL	BE	134.0	ES	05:24	11.24	-0.80	HLM1	HZ	822.0	EP	21:10	46.09	-0.06	
WOL	BE	134.0	AML	05:24	15.14	35 0.35	HLM1	HN	822.0	ES	21:12	03.70	0.79	
WOL	BN	134.0	AML	05:24	16.42	31 0.48	HLM1	HN	822.0	AML	21:12	08.02	151 0.54	
MCH1	HZ	138.0	EP	05:23	57.29	0.37	HLM1	HE	822.0	AML	21:12	08.12	191 0.36	
MCH1	HE	138.0	ES	05:24	13.14	0.16	WPM1	SZ	827.0	EP	21:10	46.22	-0.61	
MCH1	HE	138.0	AML	05:24	14.52	71 0.52	WOL	BZ	838.0	EP	21:10	47.87	-0.29	
MCH1	HN	138.0	AML	05:24	15.25	60 0.16	WOL	BN	838.0	AML	21:12	14.35	117 0.65	
SSW	EZ	154.0	EP	05:24	19.26	20.06	WOL	BE	838.0	AML	21:12	15.55	129 0.55	
LPW	BZ	171.0	EP	05:24	01.57	0.14	WME	SZ	841.0	EP	21:10	47.92	-0.61	
JSA	HE	183.0	AML	05:24										

TABLE 2 : PHASE DATA

MONM	HN	869.0	AML	21:12	18.69	180	0.62	STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES
MONM	HE	869.0	AML	21:12	19.13	181	0.18	MDO	SZ	29.4	IP	C	03:29	46.43		-0.18		
OLDB	HZ	870.0	EP	21:10	50.86		-1.30	MCD	SZ	56.0	EP		03:29	51.42		0.41		
OLDB	HN	870.0	ES	21:12	13.62		0.33	MCD	SE	56.0	ES		03:29	57.95		-0.43		
OLDB	HN	870.0	AML	21:12	19.19	418	0.30	MCD	SN	56.0	AML		03:29	59.31	16	0.24		
OLDB	HE	870.0	AML	21:12	44.57	427	0.40	MCD	SE	56.0	AML		03:30	00.53	17	0.38		
YRE	SZ	873.0	EP	21:10	52.07		-0.47	MME1	SZ	61.8	EP		03:29	51.80		-0.15		
BATH	HZ	877.0	EP	21:10	52.65		-0.39	MVH1	SZ	73.7	EP		03:29	53.99		0.26		
BATH	HN	877.0	AML	21:12	23.23	401	0.52	KAC	SZ	82.8	EP		03:29	54.64		-0.52		
BATH	HE	877.0	AML	21:12	24.49	400	0.58	KSB	SZ	86.9	EP		03:29	55.28		-0.54		
LPW	BZ	912.0	EP	21:10	57.35		-0.06	DRUM	HZ	99.4	EP		03:29	57.93		0.21		
HEX	SZ	978.0	EP	21:11	04.73		-0.89	DRUM	HE	99.4	ES		03:30	09.88		-0.09		
HTL	HZ	1018.0	EP	21:11	09.06		-1.43	DRUM	HN	99.4	AML		03:30	13.68	30	0.12		
HTL	HE	1018.0	AML	21:12	49.75	34	0.50	KPL	HZ	101.0	EP		03:29	58.00		0.12		
HTL	HN	1018.0	AML	21:12	51.09	36	0.44	KPL	HE	101.0	ES		03:30	10.72		0.46		
DYA	HZ	1036.0	EP	21:11	10.82		-1.94	KPL	HN	101.0	AML		03:30	12.39	19	0.20		
DYA	HN	1036.0	ES	21:12	48.94		0.00	KPL	HE	101.0	AML		03:30	13.79	16	0.30		
DYA	HE	1036.0	AML	21:12	52.10	26	0.34	EAB	SZ	123.0	EP		03:30	01.21		-0.11		
DYA	HN	1036.0	AML	21:12	52.17	40	0.38	BIGH	HZ	136.0	EP		03:30	03.65		0.30		
JSA	HZ	1069.0	EP	21:11	15.30		-1.55	BIGH	HN	136.0	ES		03:30	19.72		0.00		
JSA	HN	1069.0	ES	21:12	55.23		-0.79	BIGH	HN	136.0	AML		03:30	20.66	7	0.09		
JSA	HN	1069.0	AML	21:13	00.56	75	0.60	BIGH	HE	136.0	AML		03:30	22.89	18	0.60		
JSA	HE	1069.0	AML	21:13	00.95	62	0.62	EDI	HN	158.0	AML		03:30	12.62	8	0.58		
								EDI	HE	158.0	AML		03:30	14.94	13	0.52		
February 24 2010								ESY	SZ	173.0	EP		03:30	08.82		0.17		
Lat: 51.476N								EBL	SZ	177.0	EP		03:30	09.41		0.23		
Lon: -2.008W								ESK	HE	223.0	AML		03:30	44.73	4	0.18		
Grid Ref: 399.44 kmE 175.28 kmN								ESK	HN	223.0	AML		03:30	45.47	4	0.18		
Locality: CHIPPEHAM, WILTSHIRE																		
Velocity model: Lownet Xnear: 150.0 Xfar: 300.0																		
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES								
SWNL	HZ	15.0	IP	C	12:30	13.43		-0.07										
SWNL	HN	15.0	ES		12:30	17.27		0.43										
SWNL	HE	15.0	AML		12:30	17.48	376	0.24										
SWNL	HN	15.0	AML		12:30	17.59	762	0.32										
BATH	HZ	22.5	IP	C	12:30	14.22		-0.03										
BATH	HN	22.5	ES		12:30	18.43		0.29										
BATH	HE	22.5	AML		12:30	18.87	236	0.08										
BATH	HN	22.5	AML		12:30	20.34	300	0.22										
STRD	HZ	35.1	IP	D	12:30	15.65		-0.15										
STRD	HE	35.1	ES		12:30	20.30		-0.53										
STRD	HE	35.1	AML		12:30	21.00	109	0.14										
STRD	HN	35.1	AML		12:30	21.01	194	0.16										
OLDB	HZ	42.9	EP		12:30	16.85		0.04										
OLDB	HE	42.9	ES		12:30	22.55		-0.02										
OLDB	HE	42.9	AML		12:30	23.43	354	0.36										
OLDB	HN	42.9	AML		12:30	25.76	239	0.34										
SSW	EZ	55.7	EP	9	12:30	38.14		19.49										
WOL	BZ	57.5	IP	D	12:30	18.86		-0.02										
WOL	BN	57.5	ES		12:30	25.91		-0.24										
WOL	BN	57.5	AML		12:30	26.86	109	0.50										
WOL	BE	57.5	AML		12:30	26.93	146	0.30										
MONM	HZ	68.4	IP	D	12:30	20.34		-0.07										
MONM	HN	68.4	ES		12:30	28.80		0.00										
MONM	HE	68.4	AML		12:30	29.10	62	0.12										
MONM	HN	68.4	AML		12:30	29.19	43	0.16										
SKP	EZ	87.4	EP	9	12:30	42.11		18.98										
MCH1	HZ	89.7	IP	D	12:30	23.30		-0.16										
MCH1	HE	89.7	ES		12:30	33.92		-0.16										
MCH1	HN	89.7	AML		12:30	34.26	30	0.24										
MCH1	HE	89.7	AML		12:30	34.40	51	0.48										
HLM1	HZ	131.0	IP	D	12:30	29.41		0.08										
HLM1	HN	131.0	ES		12:30	44.61		0.38										
HLM1	HN	131.0	AML		12:30	45.34	15	0.48										
HLM1	HE	131.0	AML		12:30	46.35	17	0.18										
HEX	SZ	133.0	EP		12:30	30.13		0.51										
LPW	BZ	159.0	EP		12:30	33.06		0.27										
DYA	HE	178.0	ES		12:30	53.85		-0.55										
DYA	HN	178.0	ES		12:30	54.15		-0.25										
DYA	HN	178.0	AML		12:30	58.79	11	0.90										
DYA	HE	178.0	AML		12:31	00.47	9	0.72										
March 1 2010																		
Time: 21:44 06.5 UTC																		
Magnitude: 1.4 ML																		
Lat: 50.982N																		
Lon: -3.763W																		
Depth: 12.5 km																		
Grid Ref: 276.26 kmE 121.83 kmN																		
RMS: 0.20 secs																		
Locality: SOUTH MOLTON, DEVON																		
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0																		
Comment: 6KM SE of S MOLTON																		
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES								
HEX	HZ	9.7	IP	D	21:44	09.49		0.12										
HEX	SZ	9.7	ES		21:44	11.36		-0.11										
HTL	HZ	50.7	EP		21:44	15.47		0.21										
HTL	HE	50.7	ES		21:44	21.51		-0.15										
HTL	HE	50.7	AML		21:44	21.89	12	0.18										
HTL	HN	50.7	AML		21:44	24.92	18	0.24										
DYA	HZ	62.0	EP		21:44	17.13		0.09										
DYA	HE	62.0	ES		21:44	24.53		-0.21										
DYA	HN	62.0	AML		21:44	27.81	28	0.09										
DYA	HE	62.0	AML		21:44	27.88	45											

TABLE 2 : PHASE DATA

LPW	BZ	197.0	EP	01:45	52.26	0.21	MONM	HE	114.0	AML	04:37	20.01	15	0.38								
LPW	BE	197.0	ES	01:46	14.83	0.65	STRD	HZ	114.0	EP	04:37	02.53		0.15								
LPW	BE	197.0	AML	01:46	16.28	22 0.39	STRD	HE	114.0	ES	04:37	16.22		0.03								
LPW	BN	197.0	AML	01:46	16.34	15 0.35	STRD	HN	114.0	AML	04:37	19.75	19	0.46								
MCH1	HZ	211.0	EP	01:45	54.24	0.33	STRD	HE	114.0	AML	04:37	20.38	22	0.74								
MCH1	HE	211.0	ES	01:46	18.21	0.80	WPM1	SZ	124.0	EP	04:37	04.51		0.61								
MCH1	HN	211.0	AML	01:46	20.30	6 0.32	LPW	BZ	147.0	EP	04:37	08.02		0.75								
MCH1	HE	211.0	AML	01:46	22.83	7 0.54	LPW	BN	147.0	ES	04:37	24.85		0.21								
MONM	HZ	232.0	EP	01:45	57.12	0.72	YRE	SZ	150.0	EP	04:37	07.96		0.30								
MONM	HE	232.0	AML	01:46	28.85	9 0.42																
MONM	HN	232.0	AML	01:46	29.71	11 0.46																
March 23 2010 Time: 08:38 49.0 UTC Magnitude: 2.2 ML																						
Lat: 49.156N Lon: -3.250W Depth: 8.2 km RMS: 0.40 secs																						
Grid Ref: 308.87 kmE -81.91 kmN Locality: WORKSHOP, NOTTS Velocity model: Lownet Xnear: 100.0 Xfar: 150.0																						
Comment: 70KM WEST OF JERSEY																						
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	
JSA	HZ	78.7	EP	08:39	01.93	-0.10	KBI1	SZ	16.9	EP	9	06:08	49.06								-7.25	
JSA	HN	78.7	ES	08:39	11.71	0.16	LHO	EZ	50.3	EP		06:09	01.69							-0.32		
JSA	HE	78.7	AML	08:39	12.75	115 0.23	HPK	HZ	81.6	EP		06:09	06.85							0.01		
JSA	HN	78.7	AML	08:39	14.56	96 0.14	HPK	HN	81.6	ES		06:09	17.49							0.17		
JDG	EZ	87.8	EP	08:39	03.37	-0.06	HPK	HN	81.6	AML		06:09	22.49	37	0.26							
JDG	EN	87.8	ES	08:39	13.97	-0.02	FOEL	HZ	135.0	EP		06:09	15.82							0.62		
JDC	EZ	87.8	EP	08:39	03.40	-0.04	FOEL	HZ	135.0	ES		06:09	32.58							0.79		
JDC	EN	87.8	ES	08:39	14.03	0.03	HLM1	HZ	136.0	EP		06:09	15.44							0.18		
DYA	HZ	151.0	EP	08:39	12.37	-0.47	HLM1	HN	136.0	AML		06:09	34.44	13	0.34							
DYA	HE	151.0	ES	08:39	30.64	0.38	HLM1	HE	136.0	AML		06:09	36.06	16	0.26							
DYA	HE	151.0	AML	08:39	32.38	25 0.30	MCH1	HZ	182.0	EP	9	06:09	20.67							-1.06		
DYA	HN	151.0	AML	08:39	33.46	32 0.14	MCH1	HN	182.0	ES		06:09	41.70							-0.32		
CCA1	HZ	183.0	EP	08:39	16.85	-0.31	MCH1	HN	182.0	AML		06:09	44.21	14	0.42							
CCA1	HN	183.0	ES	08:39	38.20	0.47	MCH1	HE	182.0	AML		06:09	45.56	10	0.34							
CCA1	HN	183.0	AML	08:39	39.06	21 0.26																
CCA1	HE	183.0	AML	08:39	40.62	30 0.13																
SBD	BZ	188.0	EP	08:39	18.51	0.77																
SBD	BE	188.0	ES	08:39	37.94	-0.80																
SBD	BN	188.0	AML	08:39	42.67	28 0.25																
SBD	BE	188.0	AML	08:39	43.11	24 0.50																
HTL	HE	223.0	AML	08:39	52.35	12 0.38																
HTL	HN	223.0	AML	08:39	57.71	19 0.28																
April 1 2010 Time: 10:14 38.5 UTC Magnitude: 3.3 ML																						
Lat: 61.883N Lon: 3.486W Depth: 10.0 km RMS: 0.60 secs																						
Grid Ref: 688.17 kmE 1345.74 kmN Locality: NORTHERN NORTH SEA Velocity model: North Sea Xnear: 750.0 Xfar: 1500.0																						
Comment: 300KM NE OF LERWICK																						
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	
LRW	HZ	319.0	EP	10:15	23.04	0.49	STNC	HZ	20.5	EP	01:58	36.74										
LRW	HE	319.0	ES	10:15	54.05	-0.68	STNC	HE	20.5	AML		01:58	39.95	95	0.44							
LRW	HN	319.0	AML	10:15	56.25	28 0.62	STNC	HE	20.5	ES		01:58	39.97	117	0.20							
LRW	HE	319.0	AML	10:15	57.03	37 0.42	KBI1	EZ	60.7	EP		01:58	42.83								-0.38	
MCD	SN	610.0	ES	10:16	58.44	0.98	HLM1	HZ	61.8	EP		01:58	43.11								-0.30	
MCD	SZ	610.0	AML	10:17	02.46	10 0.40	FOEL	HE	65.4	AML		01:58	55.10	55	0.10						-0.19	
MCD	SN	610.0	AML	10:17	03.93	16 0.34	FOEL	HE	65.4	ES		01:58	55.18								-0.37	
MVH1	SZ	615.0	EP	10:15	59.45	0.12	MCH1	HN	114.0	AML		01:59	08.57	8	0.18							
DRUM	HZ	649.0	EP	10:16	03.02	-0.57	MCH1	HE	114.0	AML		01:59	08.67	10	0.28							
DRUM	HE	649.0	ES	10:17	05.38	-0.34	HPK	HZ	124.0	EP		01:59	53.54								0.59	
DRUM	HE	649.0	AML	10:17	06.14	38 0.40	HPK	HE	124.0	ES		01:59	07.25								-0.42	
DRUM	HN	649.0	AML	10:17	07.39	44 0.42	HPK	HN	124.0	AML		01:59	09.46	27	0.50							
April 15 2010 Time: 05:47 56.2 UTC Magnitude: 1.3 ML																						
Lat: 57.354N Lon: -6.700W Depth: 2.7 km RMS: 0.30 secs																						
Grid Ref: 117.36 kmE 839.02 kmN Locality: ISLE OF SKYE Velocity model: Lownet Xnear: 500.0 Xfar: 1000.0																						
Comment: 300KM NE OF LERWICK																						
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	MONM	HZ	125.0	EP	01:58	53.57						0.39
RRH	SZ	63.0	EP	05:48	06.91	-0.22	MONM	HE	125.0	ES		01:58	08.34								0.27	
KPL	HZ	63.1	EP	05:48	06.58	-0.55	MONM	HN	125.0	AML		01:59	11.36	10	0.16							
KPL	HN	63.1	ES	05:48	15.20	0.07	MONM	HE	125.0	AML		01:59	11.45	12	0.24							
KPL	HN	63.1	AML	05:48	24.33	15 0.64	YRE	EZ	148.0	EP		01:58	56.72								0.26	
KPL	HE	63.1	AML	05:48	27.65	19 0.72	WLF1	HZ	151.0	EP		01:58	57.54								0.62	
RRR	SZ	77.4	EP	05:48	09.82	0.46	WLF1	HN	151.0	ES		01:59	14.39								-0.14	
RRR	SE	77.4	ES	05:48	18.75	-0.24	WLF1	HZ	151.0	AML		01:59	15.30	10	0.28							
RRR	SE	77.4	AML	05:48	22.36	10 0.38	LWP	BZ	153.0	EP		01:59	57.50								0.35	
RRR	SN	77.4	AML	05:48	22.39	16 0.32	LWP	BE	153.0	ES		01:59	15.66								0.71	
KSB	SZ	78.8	EP	05:48	09.66	0.02	LWP	BN	153.0	AML		01:59	17.06	5	0.11							
KAC	SZ	85.7	EP	05:48	10.69	0.02	LWP	BE	153.0	ES		01:59	17.08	5	0.22							
RSC	SZ	143.0	EP	05:48	19.48	0.04																
MVH1	SZ	163.0	EP	05:48	22.70	0.39																
April 20 2010 Time: 04:36 43.5 UTC Magnitude: 1.4 ML																						
Lat: 52.803N Lon: -2.219W Depth: 3.1 km RMS: 0.50 secs																						

TABLE 2 : PHASE DATA

WLF1	HE	171.0	AML	20:02	46.97	6	0.26		STNC	HE	144.0	AML	00:15	53.96	28	0.36																		
WLF1	HN	171.0	AML	20:02	47.85	9	0.26		FOEL	HZ	189.0	EP	00:15	35.16		-1.01																		
ESY	EZ	178.0	EP	20:02	26.55		1.77		FOEL	HE	189.0	AML	00:16	02.00	6	0.46																		
YRC	EZ	183.0	EP	20:02	24.66		-0.60		FOEL	HN	189.0	AML	00:16	02.46	14	0.40																		
HLM1	HZ	202.0	EP	20:02	27.60		-0.15		GAL1	HZ	201.0	EP	00:15	38.20		0.67																		
May 3 2010 Time: 23:07 23.0 UTC Magnitude: 1.8 ML																																		
Lat: 54.111N Lon: -2.525W Depth: 8.9 km RMS: 0.30 secs																																		
Grid Ref: 365.68 kmE 468.49 kmN Locality: BENTHAM, N YORKSHIRE Velocity model: Lownet Xnear: 100.0 Xfar: 200.0																																		
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	May 20 2010 Time: 23:53 17.3 UTC Magnitude: 1.2 ML																							
HPK	HZ	61.4	IP	C	23:07	33.49				0.09	Lat: 56.318N Lon: -5.346W Depth: 15.5 km																							
HPK	HN	61.4	ES		23:07	40.60				-0.40	Grid Ref: 193.10 kmE 718.98 kmN	RMS: 0.30 secs																						
HPK	HE	61.4	AML		23:07	41.50	129	0.54			Locality: OBAN, ARGYLL & BUTE																							
HPK	HZ	61.4	AML	D	23:07	41.53	207	0.32			Velocity model: Lownet Xnear: 100.0 Xfar: 200.0																							
KESW	HZ	65.2	IP		23:07	34.03				0.03	Comment: 12KM SE OF OBAN																							
KESW	HB	65.2	ES		23:07	41.87				-0.17	STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES													
KESW	HE	65.2	AML		23:07	42.28	70	0.34			EAB	EZ	64.1	IP	C	23:53	28.23				0.00													
KESW	HN	65.2	AML		23:07	42.73	42	0.36			PGB1	HZ	77.9	EP		23:53	30.24				-0.08													
LHO	EZ	76.8	IP	D	23:07	36.22				0.38	PGB1	HN	77.9	ES		23:53	39.94				0.11													
LCP	EZ	97.5	EP		23:07	39.08				0.09	PGB1	HE	77.9	AML		23:53	42.34	10	0.22															
ECK	EZ	125.0	EP		23:07	43.46				0.22	KPL	HZ	115.0	EP		23:53	35.67				0.06													
WPM1	EZ	132.0	EP		23:07	43.91				-0.22	KPL	HE	115.0	ES		23:53	49.03				0.04													
ESK	HN	141.0	EP		23:07	45.90				0.42	KPL	HE	115.0	AML		23:53	51.55	5	0.32															
ESK	HE	141.0	AML		23:08	05.34	6	0.26			KPL	HE	115.0	ES		23:53	52.37	4	0.22															
FOEL	HZ	143.0	EP		23:07	46.07				0.28	KAC	EZ	131.0	EP		23:53	37.76				-0.22													
FOEL	HN	143.0	ES		23:08	02.48				0.05	EDI	HZ	141.0	EP	9	23:53	23.64				-15.70													
FOEL	HE	143.0	AML		23:08	04.36	39	0.54			EDI	HN	141.0	ES		23:53	39.23				-0.52													
WLF1	HZ	154.0	EP		23:07	46.53				-0.70	EDI	HE	141.0	AML		23:53	42.12	4	0.42															
WLF1	HE	154.0	AML		23:08	11.16	6	0.16			EDI	HN	141.0	ES		23:53	42.31	4	0.30															
WLF1	HN	154.0	AML		23:08	12.04	9	0.46			GAL1	HZ	167.0	EP		23:53	42.06				-0.66													
GALL	HZ	165.0	EP		23:07	48.51				-0.30	GAL1	HN	167.0	ES		23:54	01.11				-0.17													
GALL	HN	165.0	AML		23:08	10.62	14	0.28			GAL1	HN	167.0	AML		23:54	04.20	3	0.28															
GALL	HE	165.0	ES		23:08	10.66	7	0.62			GAL1	HE	167.0	ES		23:54	05.01	4	0.36															
YRC	EZ	166.0	EP		23:07	48.34				-0.59	ESK	HZ	174.0	EP		23:53	44.55				0.81													
YRE	EZ	178.0	IP	D	23:07	49.87				-0.60	ESK	HN	174.0	ES		23:54	03.58				0.53													
HLM1	HZ	179.0	EP		23:07	50.40				-0.23	ESK	HN	174.0	AML		23:54	07.91	2	0.42															
HLM1	HE	179.0	ES		23:08	11.23				0.43	ESK	HE	174.0	AML		23:54	08.46	3	0.22															
HLM1	HN	179.0	AML		23:08	12.97	11	0.24			DRUM	HZ	188.0	EP		23:53	45.70				0.33													
HLM1	HE	179.0	AML		23:08	14.15	11	0.18			DRUM	HN	188.0	AML		23:54	15.15	8	0.52															
May 6 2010 Time: 22:24 00.6 UTC Magnitude: 2.7 ML																			May 23 2010 Time: 13:46 19.4 UTC Magnitude: 1.5 ML															
Lat: 52.847N Lon: -9.364W Depth: 4.7 km RMS: 1.20 secs																			Lat: 55.926N Lon: -4.370W Depth: 2.2 km															
Grid Ref: -95.53 kmE 353.19 kmN Locality: COUNTY CLARE, IRELAND Velocity model: Lownet Xnear: 500.0 Xfar: 1000.0 Comment: FELT COUNTY CLARE Intensity: 3																			May 23 2010 Time: 13:46 19.4 UTC Magnitude: 1.5 ML															
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES													
VAL	HZ	90.5	EP		22:24	16.40				0.74	PGB1	HZ	14.6	IP	C	13:46	22.33				-0.08													
DSB	BZ	216.0	EP	9	22:24	27.05				-6.12	PGB1	HE	14.6	ES		13:46	24.43				-0.20													
DSB	BN	216.0	ES		22:24	52.51				1.68	PGB1	HN	14.6	AML		13:46	24.70	93	0.15															
DSB	BN	216.0	AML		22:24	53.88	80	0.30			PGB1	HE	14.6	AML		13:46	24.74	278	0.21															
DSB	BE	216.0	AML		22:24	58.48	41	0.50			EAB	EZ	29.3	EP		13:46	24.57				-0.34													
YRC	EZ	332.0	EP		22:24	48.32				0.64	EAB	HN	29.3	ES		13:46	28.64				-0.31													
WLF1	HZ	344.0	EP		22:24	50.52				1.27	ELO	EZ	73.1	EP		13:46	32.46				0.41													
WLF1	HN	344.0	AML		22:25	32.21	12	0.62			EDF	HZ	73.9	EP	9	13:46	14.63				-17.50													
WLF1	HE	344.0	AML		22:25	32.99	11	0.54			EDF	HN	73.9	ES		13:46	22.15				-1.77													
WME	EZ	353.0	EP		22:24	51.06				0.70	GAL1	HZ	120.0	AML		13:46	26.85	9	0.20															
LPW	BN	364.0	AML		22:25	46.91	9	0.70			GAL1	HN	120.0	ES		13:46	26.94	11	0.44															
LPW	BE	364.0	AML		22:25	51.53	10	0.45			EBL	EZ	84.8	EP		13:46	33.83				-0.02													
WPM1	EZ	376.0	EP		22:24	54.10				0.84	ESY	HZ	100.0	EP		13:46	36.27				0.10													
CCAL	HN	390.0	EP		22:24	53.28				-1.70	ESY	HN	110.0	EP		13:46	39.08				1.38													
CCAL	HN	390.0	ES		22:25	35.84				1.15	ECK	EZ	114.0	EP		13:46	38.71				0													

TABLE 2 : PHASE DATA

TABLE 2 : PHASE DATA

MONM	HZ	88.0	EP	19:55	49.78	0.04	Velocity model: Lownet Xnear: 100.0 Xfar: 200.0
MONM	HE	88.0	ES	19:56	01.20	0.36	Comment: 9KM ENE OF LOCHALINE
MONM	HN	88.0	AML	19:56	01.63	9 0.76	KSB EZ 70.8 EP 11:33 17.69 -0.42
MONM	HE	88.0	AML	19:56	06.54	9 0.32	KPL HZ 84.2 EP 11:33 20.20 0.09
SKP	EZ	99.2	EP	19:56	11.99	20.50	KPL HE 84.2 ES 11:33 30.30 0.05
MCH1	HZ	110.0	EP	19:56	53.44	0.26	KPL HE 84.2 AML 11:33 34.01 48 0.16
MCH1	HE	110.0	ES	19:56	06.72	-0.07	KPL HN 84.2 AML 11:33 34.03 31 0.22
MCH1	HE	110.0	AML	19:56	09.07	6 0.26	KAC EZ 104.0 EP 11:33 23.39 0.21
MCH1	HN	110.0	AML	19:56	10.06	8 0.50	PGB1 HZ 111.0 EP 11:33 24.33 0.02
HLM1	HZ	156.0	EP	19:56	00.17	0.11	PGB1 HN 111.0 ES 11:33 37.51 -0.01
HLM1	HN	156.0	ES	19:56	17.95	-0.74	PGB1 HN 111.0 AML 11:33 38.74 15 0.24
HLM1	HN	156.0	AML	19:56	20.30	15 0.28	PGB1 HE 111.0 AML 11:33 39.07 15 0.52
HLM1	HE	156.0	AML	19:56	20.43	22 0.38	MDO EZ 122.0 EP 11:33 26.10 0.04
DYA	HZ	162.0	EP	19:56	00.20	-0.73	MVH1 EZ 173.0 EP 11:33 33.89 0.78
DYA	HE	162.0	ES	19:56	20.43	0.24	ESK HZ 206.0 EP 11:33 36.57 4 0.18
DYA	HE	162.0	AML	19:56	21.67	6 0.16	ESK HN 206.0 AML 11:34 04.24 4 0.24
DYA	HN	162.0	AML	19:56	26.79	5 0.28	ESK HE 206.0 AML 11:34 06.71 6 0.48
LPW	BZ	174.0	EP	19:56	03.10	0.56	
LPW	BE	174.0	ES	19:56	23.14	0.15	
LPW	BE	174.0	AML	19:56	25.20	8 0.25	
LPW	BN	174.0	AML	19:56	25.83	6 0.10	
HTL	HZ	176.0	EP	19:56	02.41	-0.42	
HTL	HE	176.0	ES	19:56	23.87	0.39	
HTL	HE	176.0	AML	19:56	26.01	11 0.56	
HTL	HN	176.0	AML	19:56	26.88	12 0.58	
July 12 2010 Time: 17:45 23.6 UTC Magnitude: 1.2 ML							
Lat: 52.439N Lon: -4.706W Depth: 4.7 km							
Grid Ref: 216.09 kmE 285.82 kmN RMS: 0.30 secs							
Locality: CARDIGAN BAY							
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0							
Comment: 40KM W OF ABERYSTWYTH							
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL PERI RES
LMK	HZ	21.5	EP	20:34	58.61	-0.40	LPW BZ 56.6 EP 17:45 33.17 -0.24
LMK	HN	21.5	ES	20:35	02.39	0.29	LPW BE 56.6 ES 17:45 40.22 -0.36
LMK	HN	21.5	AML	20:35	02.87	226 0.34	LPW BN 56.6 AML 17:45 34.14 17 0.30
LMK	HE	21.5	AML	20:35	02.95	284 0.20	LPW BE 56.6 AML 17:45 40.56 18 0.25
KB11	EZ	66.0	IP	C	20:35	05.36	YRE EZ 63.3 EP 17:45 34.34 -0.13
LHO	EZ	80.9	EP	20:35	08.46	0.20	YLL EZ 86.0 EP 17:45 38.00 0.01
HPK	HN	81.9	ES	20:35	18.23	-0.05	YRC EZ 90.8 EP 17:45 38.70 -0.01
HPK	HN	81.9	AML	20:35	20.08	96 0.18	WPM1 EZ 106.0 EP 17:45 41.16 0.04
HPK	HE	81.9	AML	20:35	20.30	97 0.16	WME EZ 110.0 EP 17:45 41.51 -0.19
STNC	HZ	115.0	EP	20:35	14.13	0.68	FOEL HZ 114.0 EP 17:45 42.74 0.42
HLM1	HZ	187.0	EP	20:35	23.08	-0.31	FOEL HE 114.0 AML 17:46 07.27 8 0.70
HLM1	HN	187.0	AML	20:35	49.41	6 0.78	HLM1 HZ 124.0 EP 17:45 44.41 0.43
HLM1	HE	187.0	AML	20:35	56.71	8 0.30	HLM1 HE 124.0 AML 17:45 52.71 8 0.18
July 14 2010 Time: 10:09 42.2 UTC Magnitude: 1.3 ML							
Lat: 57.087N Lon: -5.768W Depth: 3.7 km							
Grid Ref: 171.73 kmE 805.84 kmN RMS: 0.30 secs							
Locality: KNOYDART, HIGHLAND							
Velocity model: Lownet Xnear: 75.0 Xfar: 200.0							
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL PERI RES
KB11	EZ	48.1	EP	00:35	40.41	-0.42	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES
LMK	HZ	50.7	EP	00:35	40.93	-0.30	KB11 EZ 25.0 EP 10:09 47.19 -0.24
LMK	HN	50.7	ES	00:35	47.91	0.06	KPL HZ 28.9 EP 10:09 47.74 -0.28
LMK	HE	50.7	AML	00:35	56.32	102 0.56	KPL HN 28.9 ES 10:09 52.25 -0.03
LMK	HN	50.7	AML	00:35	56.71	104 0.34	KPL HE 28.9 AML 10:09 53.16 19 0.14
LHO	EZ	52.9	EP	00:35	41.73	0.10	KAC EZ 53.9 EP 10:09 54.48 20 0.24
HPK	HZ	55.9	EP	00:35	41.75	-0.30	MDO EZ 93.4 EP 10:09 52.77 0.51
HPK	HN	55.9	ES	00:35	48.87	-0.41	MVH1 EZ 133.0 EP 10:10 04.76 0.21
HPK	HE	55.9	AML	00:36	01.89	84 0.51	MCD EN 161.0 ES 10:10 28.14 0.30
HPK	HN	55.9	AML	00:36	02.17	89 0.43	PGB1 HE 163.0 AML 10:10 48.82 11 0.16
LCP	EZ	131.0	EP	00:35	54.44	0.72	PGB1 HN 163.0 AML 10:10 48.93 12 0.16
FOEL	HZ	162.0	EP	00:35	58.79	0.53	
FOEL	HE	162.0	AML	00:36	34.26	20 0.66	
FOEL	HN	162.0	AML	00:36	34.44	46 0.38	
HLM1	HZ	170.0	EP	00:36	00.08	0.72	
HLM1	HN	170.0	AML	00:36	36.51	17 0.94	
HLM1	HE	170.0	AML	00:36	36.72	36 0.40	
KESW	HZ	174.0	EP	00:36	00.43	0.52	
KESW	HN	174.0	AML	00:36	34.95	34 0.42	
KESW	HE	174.0	AML	00:36	36.73	45 0.44	
ESK	HZ	238.0	EP	00:36	07.86	0.03	
ESK	HN	238.0	AML	00:36	57.95	5 0.48	
ESK	HE	238.0	AML	00:37	02.32	10 0.50	
LPW	BE	260.0	AML	00:36	57.94	8 0.45	
LPW	BN	260.0	AML	00:37	03.99	9 0.45	
July 15 2010 Time: 10:22 39.7 UTC Magnitude: 2.0 ML							
Lat: 51.896N Lon: -0.639W Depth: 14.3 km							
Grid Ref: 493.64 kmE 222.86 kmN RMS: 0.30 secs							
Locality: DUNSTABLE, BEDFORDSHIRE							
Velocity model: Lownet Xnear: 125.0 Xfar: 250.0							
Comment: 8KM W OF DUNSTABLE							
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL PERI RES
SWN1	HZ	90.9	EP	10:22	54.20	-0.31	SWN1 HZ 90.9 EP 10:23 05.61 0.28
SWN1	HN	90.9	ES	10:23	05.61	0.03	SWN1 HE 90.9 AML 10:23 06.14 149 0.38
SWN1	HE	90.9	AML	10:23	06.19	97 0.14	STRD HZ 106.0 EP 10:22 56.81 0.17
STRD	HE	106.0	ES	10:23	08.93	-0.11	STRD HN 106.0 AML 10:23 10.95 73 0.44
STRD	HE	106.0	AML	10:23	11.69	72 0.38	STRD HE 106.0 AML 10:23 21.47 27 0.26
BATH	HZ	127.0	EP	10:23	00.16	0.47	
BATH	HN	127.0	ES	10:23	13.85	-0.45	
OLDB	HN	134.0	ES	10:23	16.17	0.13	
MONM	HZ	149.0	EP	10:23	02.85	0.02	
MONM	HN	149.0	ES	10:23	19.69	-0.05	
MONM	HE	149.0	AML	10:23	20.99	45 0.18	
FOEL	HZ	81.8	EP	00:51	24.60	-0.03	
FOEL	HE	81.8	ES	00:51	33.99	0.02	
FOEL	HE	81.8	AML	00:51	35.89	4 0.10	
FOEL	HN	81.8	AML	00:51	36.96	6 0.20	
LPW	BZ	98.7	EP	00:51	27.67	0.28	
LPW	BE	98.7	ES	00:51	38.42	-0.18	
LPW	BE	98.7	AML	00:51	41.17	7 0.20	
LPW	BN	98.7	AML	00:51	41.84	13 0.20	
HLM1	HZ	115.0	EP	00:51	29.79	-0.22	
HLM1	HN	115.0	ES	00:51	43.09	0.08	
HLM1	HN	115.0	AML	00:51	44.40	6 0.24	
HLM1	HE	115.0	AML	00:51	44.87	4 0.20	
MCH1	HZ	145.0	EP	9	00:51	34.38	-0.22
MCH1	HN	145.0	ES	00:51	50.80	0.30	
MCH1	HN	145.0	AML	00:51	52.33	4 0.14	
MCH1	HE	145.0	AML	00:51	52.67	3 0.14	
July 20 2010 Time: 19:35 48.1 UTC Magnitude: 1.4 ML							
Lat: 50.095N Lon: -2.226W Depth: 5.0 km							
Grid Ref: 383.84 kmE 21.75 kmN RMS: 0.60 secs							
Locality: ENGLISH CHANNEL							
Velocity model: Lownet Xnear: 150.0 Xfar: 300.0							
Comment: 60KM SSE OF WEYMOUTH							
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL PERI RES
JLP	EZ	94.5	EP	19:36	03.46	-0.34	
JQE	EZ	100.0	EP	19:36	04.39	-0.32	
JSA	HZ	101.0	EP	19:36	04.40	-0.38	

TABLE 2 : PHASE DATA

TABLE 2 : PHASE DATA

LCP	EZ	97.6	EP	03:39	17.75	0.06	MDO	SZ	39.8	ES	07:01	47.88	-0.34										
ECK	EZ	125.0	EP	03:39	22.12	0.18	KSB	EZ	66.8	EP	07:01	47.10	-0.13										
WPM1	EZ	132.0	EP	03:39	22.40	-0.46	KAC	EZ	73.9	EP	07:01	48.27	-0.02										
ESK	HZ	141.0	EP	03:39	24.65	0.46	KPL	HZ	84.1	IP	07:01	50.04	0.20										
ESK	HN	141.0	ES	03:39	40.34	-0.27	KPL	HE	84.1	ES	07:02	00.04	0.06										
ESK	HE	141.0	AML	03:39	42.18	4 0.20	KPL	HN	84.1	AML	07:02	04.12	26 0.21										
ESK	HN	141.0	AML	03:39	42.80	3 0.14	KPL	HE	84.1	AML	07:02	04.19	24 0.18										
WME	EZ	142.0	EP	03:39	23.65	-0.59	MCD	SZ	85.9	EP	07:01	50.60	0.43										
FOEL	HZ	143.0	EP	03:39	25.00	0.46	MCD	SN	85.9	ES	07:02	00.75	0.19										
FOEL	HN	143.0	ES	03:39	41.65	0.43	MCD	SN	85.9	AML	07:02	04.97	28 0.31										
FOEL	HE	143.0	AML	03:39	43.10	14 0.52	MME1	SZ	87.2	EP	07:01	50.18	-0.21										
WLF1	HZ	154.0	EP	03:39	25.36	-0.59	DRUM	HZ	114.0	EP	07:01	54.63	0.07										
GALL	HZ	164.0	EP	03:39	28.92	1.40	DRUM	HN	114.0	ES	07:02	07.86	-0.29										
GALL1	HN	164.0	AML	03:39	49.24	6 0.28	DRUM	HE	114.0	AML	07:02	11.15	33 0.15										
GALL1	HE	164.0	AML	03:39	55.21	7 0.54	DRUM	HN	114.0	AML	07:02	11.38	25 0.16										
YRC	EZ	166.0	EP	03:39	26.98	-0.69	BIGH	HZ	159.0	EP	07:02	01.87	0.84										
YRE	EZ	178.0	EP	03:39	28.34	-0.89	BIGH	HN	159.0	ES	07:02	20.14	0.79										
HLM1	HZ	179.0	EP	03:39	29.82	0.41	BIGH	HE	159.0	AML	07:02	21.74	18 0.23										
HLM1	HN	179.0	AML	03:39	52.53	5 0.28	BIGH	HN	159.0	AML	07:02	21.97	10 0.22										
HLM1	HE	179.0	AML	03:39	52.77	6 0.16																	
August 9 2010 Time: 11:26 35.3 UTC				Magnitude: 1.5 ML				August 27 2010 Time: 13:16 53.7 UTC				Magnitude: 1.2 ML											
Lat: 51.670N	Lon: -2.410W			Depth: 14.2 km				Lat: 57.222N	Lon: -5.610W	Depth: 4.2 km		Grid Ref: 182.09 kmE 820.34 kmN	RMS: 0.30 secs										
Grid Ref: 371.65 kmE 196.93 kmN				RMS: 0.20 secs				Locality: GLENELG, HIGHLAND															
Locality: STROUD, GLOUCESTERSHIRE																							
Velocity model: Lownet Xnear: 55.0 Xfar: 110.0																							
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES		
OLDB	HZ	9.7	IP	C	11:26	38.39		0.05			KSB	SZ	11.5	IP	C	13:16	55.92		-0.30				
OLDB	HZ	9.7	AMPG		11:26	38.45	185	0.06			KPL	HZ	13.2	IP	D	13:16	56.52		0.08				
OLDB	HE	9.7	ES		11:26	40.75		0.20			KPL	HN	13.2	ES		13:16	58.42		-0.02				
OLDB	HZ	9.7	AMSG		11:26	40.81	37	0.11			KPL	HN	13.2	AML		13:16	56.61	33	0.14				
OLDB	HR	9.7	AMSG		11:26	40.97	462	0.18			KPL	HE	13.2	AML		13:16	59.23	28	0.86				
OLDB	HT	9.7	AMSG		11:26	40.97	236	0.15			KAC	SZ	36.0	IP	D	13:17	00.50		0.18				
OLDB	HE	9.7	AML		11:26	41.06	454	0.17			RRR	SZ	71.7	EP		13:17	05.71		-0.20				
OLDB	HN	9.7	AML		11:26	41.47	352	0.32			RRR	SN	71.7	ES		13:17	14.60		-0.21				
STRD	HZ	20.8	IP	C	11:26	39.78		0.07			RRR	SN	71.7	AML		13:17	18.63	13	0.16				
STRD	HZ	20.8	AMPG		11:26	39.84	10	0.06			RRR	SE	71.7	AML		13:17	18.85	9	0.20				
STRD	HE	20.8	ES		11:26	42.70		-0.22			MDO	SZ	78.9	EP		13:17	07.20		0.11				
STRD	HZ	20.8	AMSG		11:26	42.79	44	0.04			RRH	SZ	101.0	EP		13:17	10.84		0.39				
STRD	HT	20.8	AMSG		11:26	43.43	152	0.10			MVH1	SZ	116.0	EP		13:17	13.76		0.99				
STRD	HR	20.8	AMSG		11:26	43.44	47	0.08			RSC	SZ	128.0	EP		13:17	14.69		0.04				
STRD	HN	20.8	AML		11:26	43.45	118	0.17			MCD	SZ	147.0	EP		13:17	18.18		0.74				
STRD	HE	20.8	AML		11:26	43.52	120	0.14			MCD	SE	147.0	ES		13:17	34.87		0.10				
BATH	HZ	25.9	IP	D	11:26	40.35		-0.07			MCD	SN	147.0	AML		13:17	37.20	10	0.19				
BATH	HE	25.9	ES		11:26	43.83		-0.31			MME1	SZ	160.0	EP		13:17	37.90		-0.40				
BATH	HN	25.9	AML		11:26	45.80	77	0.20															
BATH	HE	25.9	AML		11:26	48.13	89	0.36															
MONM	HZ	33.1	IP	D	11:26	41.55		0.08															
MONM	HE	33.1	ES		11:26	46.00		0.03															
MONM	HR	33.1	AMSG		11:26	46.22	24	0.10															
MONM	HT	33.1	AMSG		11:26	46.28	72	0.24															
MONM	HE	33.1	AML		11:26	46.37	52	0.21															
MONM	HN	33.1	AML		11:26	46.50	44	0.26															
SWN1	HZ	45.7	EP		11:26	43.84		0.46															
SWN1	HN	45.7	AML		11:26	50.85	35	0.13															
SWN1	HE	45.7	ES		11:26	50.87	40	0.17															
MCH1	HZ	54.5	IP	D	11:26	44.60		-0.13															
MCH1	HE	54.5	ES		11:26	51.45		-0.15															
MCH1	HN	54.5	AML		11:26	51.81	20	0.16															
MCH1	HE	54.5	AML		11:26	52.21	22	0.23															
HLM1	HZ	99.8	EP		11:26	51.56		-0.04															
HLM1	HE	99.8	ES		11:27	03.37		-0.11															
HLM1	HN	99.8	AML		11:27	07.89	24	0.14															
HLM1	HE	99.8	AML		11:27	08.47	25	0.26															
August 22 2010 Time: 18:51 24.5 UTC				Magnitude: 1.7 ML				August 31 2010 Time: 09:20 28.6 UTC				Magnitude: 1.6 ML											
Lat: 52.558N	Lon: -4.234W			Depth: 7.4 km				Lat: 53.940N	Lon: -1.252W	Depth: 6.1 km		Grid Ref: 449.10 kmE 449.60 kmN	RMS: 0.20 secs										
Grid Ref: 248.57 kmE 297.96 kmN				RMS: 0.20 secs				Locality: TADCASTER, N YORKSHIRE				Comment: Lownet Xnear: 100.0 Xfar: 200.0											
Locality: CARDIGAN BAY, WALES																							
Velocity model: Llynn Xnear: 100.0 Xfar: 200.0																							
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES		
YRE	EZ	48.8	EP		18:51	33.24		0.44			KPK	HZ	43.3	IP	D	09:20	36.08		-0.13				
LPW	BZ	50.7	EP		18:51	32.99		-0.12			KPK	HN	43.3	ES		09:20	41.67		-0.08				
LPW	BE	50.7	ES		18:51	39.01		0.04			KPK	HE	43.3	AML		09:20	42.01	66	0.16				
LPW	BE	50.7	AML		18:51	39.67	98	0.11			KPK	HN	43.3	AML		09:20	42.06	58	0.24				
FOEL	HZ	79.0	IP	C	18:51	37.62		-0.17			KPK	EZ	55.0	EP		09:20	38.01		-0.02				
FOEL	HN	79.0	ES		18:51	46.90		0.07			KPK	HN	83.8	EP		09:20	42.72		0.22				
FOEL	HE	79.0	AML		18:51	47.80	17	0.31			KESW	HN	83.8	ES		09:20	52.45		-0.19				
FOEL	HN	79.0	AML		18:51	47.96	34	0.45			KESW	HN	83.8	AML		09:20	53.82	35	0.16				
YRC	EZ	80.4	EP		18:51	38.05	</td																

TABLE 2 : PHASE DATA

DRUM	HN	272.0	ES	05:47	01.15	0.09	GAL1	HZ	149.0	EP	08:14	14.60	0.34								
DRUM	HN	272.0	AML	05:47	18.22	204 0.43	GAL1	HE	149.0	ES	08:14	30.80	-0.66								
DRUM	HE	272.0	AML	05:47	18.25	194 0.47	GAL1	HE	149.0	AML	08:14	32.45	27 0.28								
MME1	SZ	301.0	EP	05:46	37.00	-0.12	GAL1	HN	149.0	AML	08:14	32.95	57 0.34								
ESY	EZ	308.0	EP	05:46	37.83	-0.20	FOEL	HZ	156.0	EP	08:14	14.39	-0.84								
MCD	SZ	321.0	EP	05:46	39.85	0.17	FOEL	HZ	156.0	ES	08:14	32.64	-0.49								
MCD	SN	321.0	AML	05:47	25.10	207 0.34	FOEL	HE	156.0	AML	08:14	33.58	97 0.72								
MCD	SE	321.0	AML	05:47	29.54	259 0.46	FOEL	HN	156.0	AML	08:14	34.64	168 0.56								
MLA1	SZ	349.0	EP	05:46	43.15	0.01	YLL	EZ	159.0	EP	08:14	15.58	-0.04								
ESK	HZ	373.0	EP	05:46	45.69	-0.42	YRC	EZ	168.0	EP	08:14	16.76	-0.09								
ESK	HE	373.0	ES	05:47	23.55	0.65	YRE	EZ	183.0	EP	08:14	18.72	-0.04								
ESK	HN	373.0	AML	05:47	46.41	118 0.37	ESY	EZ	186.0	EP	08:14	18.16	-0.94								
ESK	HE	373.0	AML	05:47	47.35	86 0.33	EDI	HE	189.0	AML	08:14	45.91	22 0.48								
ECK	EZ	378.0	EP	05:46	46.22	-0.44	EDI	HN	189.0	AML	08:14	46.21	22 0.40								
MVH1	SZ	383.0	EP	05:46	47.16	-0.15	CWF	HZ	191.0	EP	08:14	20.31	0.61								
MDO	SZ	386.0	EP	05:46	48.39	0.72	CWF	HE	191.0	AML	08:14	43.85	28 0.12								
LRW	HZ	393.0	EP	05:46	48.82	0.28	CWF	HN	191.0	AML	08:14	44.78	29 0.32								
LRW	HN	393.0	AML	05:47	30.08	35 0.43	EAB	EZ	241.0	EP	08:14	25.57	-0.40								
LRW	HE	393.0	AML	05:47	32.46	36 0.30	DRUM	HZ	297.0	EP	08:14	32.19	-0.76								
HPK	HZ	409.0	EP	05:46	50.55	-0.05	DRUM	HN	297.0	AML	08:15	16.36	22 0.60								
KESW	HZ	418.0	EP	05:46	51.07	-0.55	DRUM	HE	297.0	AML	08:15	16.36	18 0.40								
KESW	HE	418.0	AML	05:48	06.04	96 0.52	KPL	HZ	392.0	EP	08:14	44.24	-0.54								
KESW	HN	418.0	AML	05:48	11.78	71 0.41	KAC	EZ	398.0	EP	08:14	44.88	-0.68								
PGB1	HZ	420.0	EP	05:46	51.65	-0.32	September 7 2010 Time: 00:28 25.1 UTC Magnitude: 0.8 ML Lat: 54.859N Lon: -2.949W Depth: 7.8 km Grid Ref: 339.09 kM 552.00 kMn Locality: CARLISLE,CUMBRIA Velocity model: Lownet Xnear: 60.0 Xfar: 120.0														
PGB1	HE	420.0	AML	05:48	00.13	110 0.44	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES					
PGB1	HN	420.0	AML	05:48	11.79	88 0.57	BHH	SZ	31.3	EP	00:28	31.14	0.28								
LMK	HZ	422.0	EP	05:46	53.40	1.20	BHH	SE	31.3	ES	00:28	35.12	0.08								
KAC	EZ	442.0	EP	05:46	54.07	-0.59	BHH	SE	31.3	AML	00:28	35.62	20 0.10								
KSB	EZ	448.0	EP	05:46	55.67	0.20	BHH	SN	31.3	AML	00:28	35.67	32 0.34								
LHO	EZ	456.0	EP	05:46	56.42	-0.05	KESW	HZ	31.7	EP	00:28	30.96	0.03								
KPL	HZ	462.0	EP	05:46	56.64	-0.54	KESW	HE	31.7	ES	00:28	35.04	-0.13								
WPM1	EZ	561.0	EP	05:47	09.26	-0.24	KESW	HE	31.7	AML	00:28	35.51	6 0.06								
WME	EZ	567.0	EP	05:47	09.86	-0.32	KESW	HN	31.7	AML	00:28	35.80	9 0.12								
WLF1	HZ	580.0	EP	05:47	10.16	-1.63	ECK	EZ	37.7	EP	00:28	31.84	-0.04								
HLM1	HZ	590.0	EP	05:47	12.87	-0.17	ECK	HZ	53.5	IP	D	00:28	34.50	0.19							
YRC	EZ	591.0	EP	05:47	13.03	-0.15	ECK	HN	53.5	AML	00:28	34.74	9 0.09								
YRE	EZ	607.0	EP	05:47	15.04	-0.15	ECK	HE	53.5	ES	00:28	40.62	-0.40								
STRD	HZ	642.0	EP	05:47	19.26	-0.22	ECK	HN	53.5	AML	00:28	41.47	6 0.18								
MCH1	HZ	644.0	EP	05:47	19.65	-0.15	GCD	SZ	63.6	EP	00:28	35.86	-0.01								
MONM	HZ	654.0	EP	05:47	20.97	-0.01	GAL1	SZ	113.0	EP	00:28	43.92	0.39								
September 1 2010 Time: 22:10 35.8 UTC Magnitude: 1.1 ML Lat: 53.176N Lon: -4.193W Depth: 15.2 km Grid Ref: 253.45 kM 366.60 kMn RMS: 0.50 secs Locality: BANGOR,Gwynedd Velocity model: Llynn Xnear: 75.0 Xfar: 150.0 Comment: FELT BANGOR,CAERNARFON... Intensity: 3												GAL1	SN	113.0	AML	00:28	56.84	-0.13			
September 1 2010 Time: 22:10 35.8 UTC Magnitude: 1.1 ML Lat: 53.176N Lon: -4.193W Depth: 15.2 km Grid Ref: 253.45 kM 366.60 kMn RMS: 0.50 secs Locality: BANGOR,Gwynedd Velocity model: Llynn Xnear: 75.0 Xfar: 150.0 Comment: FELT BANGOR,CAERNARFON... Intensity: 3												GAL1	SE	113.0	AML	00:28	57.16	5 0.37			
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES	September 7 2010 Time: 23:21 41.7 UTC Magnitude: 2.2 ML Lat: 53.448N Lon: -1.152W Depth: 1.1 km Grid Ref: 456.31 kM 394.94 kMn Locality: DONCASTER,S YORKSHIRE Velocity model: Lownet Xnear: 50.0 Xfar: 160.0 Comment: C/F,FELT ROSSINGTON Intensity: 3											
YLL	EZ	4.3	EP	D	22:10	38.65	0.16	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES				
YLL	EZ	4.3	ES	D	22:10	40.08	-0.21	LHO	EZ	47.9	IP	C	23:21	50.25	-0.22						
WLF1	HZ	18.5	IP	D	22:10	39.41	-0.41	LMK	HZ	54.9	EP	23:21	51.41	-0.12							
WLF1	HE	18.5	ES	D	22:10	41.81	-0.72	LMK	HE	54.9	AML	23:22	17.02	964 0.67							
WLF1	HN	18.5	AML	D	22:10	42.20	44 0.12	LMK	HN	54.9	AML	23:22	25.54	358 0.59							
WPM1	EZ	21.3	EP	D	22:10	40.78	0.57	HPK	HZ	64.8	IP	C	23:21	53.24	0.16						
WPM1	EZ	21.3	ES	D	22:10	43.72	0.52	HPK	HN	64.8	AML	23:22	08.03	129 0.54							
YRE	EZ	26.7	EP	D	22:10	41.52	0.57	HPK	HE	64.8	AML	23:22	09.89	155 0.60							
YRC	EZ	26.8	EP	D	22:10	41.53	0.58	CWF	HZ	79.6	EP	23:21	55.79	0.42							
FOEL	HZ	73.9	IP	D	22:10	47.55	-0.57	CWF	HE	79.6	ES	23:22	05.21	-0.13							
FOEL	HE	73.9	ES	D	22:10	55.95	-0.53	CWF	HE	79.6	AML	23:22	07.61	31 0.37							
FOEL	HE	73.9	AML	D	22:10	57.32	7 0.36	CWF	HN	79.6	AML	23:22	10.71	34 0.22							
FOEL	HN	73.9	AML	D	22:10	57.54	12 0.37	STNC	HE	80.7	AML	23:22	11.39	61 0.63							
HLM1	HZ	115.0	IP	D	22:10	54.18	-0.23	STNC	HE	80.7	AML	23:22	14.34	81 0.52							
HLM1	HE	115.0	ES	D	22:11	07.39	0.34	FOEL	HZ	150.0	EP	23:22	06.60	0.42							
HLM1	HE	115.0	AML	D	22:11	10.28	3 0.17	FOEL	HE	150.0	AML	23:22	24.63	0.59							
HLM1	HN	115.0	AML	D	22:11	10.29	3 0.10	FOEL	HE	150.0	AML	23:22	29.34	70 0.48							
September 3 2010 Time: 08:13 50.7 UTC Magnitude: 2.4 ML Lat: 54.250N Lon: -2.662W Depth: 9.7 km Grid Ref: 356.87 kM 484.03 kMn RMS: 0.50 secs Locality: KENDAL,CUMBRIA Velocity model: Lownet Xnear: 150.0 Xfar: 300.0 Comment: FELT STAVELEY,KENDAL Intensity: 3												HLM1	HZ	155.0	EP	23:22	08.08	1.17			
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES	September 3 2010 Time: 08:13 50.7 UTC Magnitude: 2.4 ML Lat: 54.250N Lon: -2.662W Depth: 9.7 km Grid Ref: 356.87 kM 484.03 kMn RMS: 0.50 secs Locality: KENDAL,CUMBRIA Velocity model: Lownet Xnear: 150.0 Xfar: 300.0 Comment: FELT STAVELEY,KENDAL Intensity: 3											
KESW	HZ	47.4	IP	D	08:13	58.92	-0.04	HLM1	HE	155.0	ES	23:22	26.49	1.20							
KESW	HZ	47.4	AMPG	D	08:13	59.06	37 0.21	HLM1	HN	155.0	AML	23:22	30.03	44 0.58							
KESW	HE	47.4	ES	D	08:14	04.59	-0.39	HLM1	HN	155.0	AML	23:22	30.71	77 0.42							
KESW	HE	47.4	AMSG	D	08:14	05.31	156 0.09	KESW	HN	180.0	EP	23:22	12.11	1.81							
KESW	HE	47.4	AMSG	D	08:14	05.32	133 0.12	KESW	HE	180.0	AML	23:22	41.11	43 0.50							
KESW	HN	47.4	AML	D	08:14	05.42	253 0.40	KESW	HN	180.0	AML	23:22	41.15	24 0.54							
KESW	HE	47.4	AML	D	08:14	05.56	219 0.27	STRD	HZ	198.0	EP	23:22	14.59	2.07							
BB01	SZ	66.1	IP	D	08:14	02.15	0.31	BB01	SZ	204.0	EP	23:22	15.03	1.78							
BB01	SZ	66.1	AMPG	D	08:14	02.23	31 0.08	BB01	HE	204.0	AML	23:22	40.58	34 0.32							
BB01	SN	66.1	ES	D	08:14	10.12	0.16	BB01	HE	204.0	AML	23:22	40.73	56 0.28							
BB01	ST	66.1	AMSG	D	08:14	10.59	55 0.16	MONM	HZ	211.0	EP	23:22	16.11	2.00							
BB01	SZ	66.1	AMSG	D	08:14	10.65	71 0.09	LPW	BE	246.0	AML	23:22	52.48	10 0.35							
BB01	SN	66.1	AML	D	08:14	10.70	89 0.24	LPW	BN	246.0	AML	23:22	58.91	15 0.35							
HPK	HZ	75.3	EP	D	08:14	02.88	-0.38	September 7 2010 Time: 23:21 41.7 UTC Magnitude: 2.2 ML Lat: 53.448N Lon: -1.152W Depth: 1.1 km Grid Ref: 456.31 kM 394.94 kMn Locality: DONCASTER,S YORKSHIRE Velocity model: Lownet Xnear: 50.0 Xfar: 160.0 Comment: C/F,FELT ROSSINGTON Intensity: 3													
HPK	HZ	75.3	ES	D	08:14	11.96	-0.47	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES				

TABLE 2 : PHASE DATA

TABLE 2 : PHASE DATA

STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	Velocity model: Lownet Xnear: 100.0 Xfar: 200.0
											Comment: C/F
KSB	EZ	12.0	IP		C	07:17	50.00		-0.14		
KPL	HZ	15.0	EP			07:17	50.64		0.06		
KPL	HE	15.0	ES			07:17	52.68		-0.10		
KPL	HE	15.0	AML			07:17	53.38	35	0.18		
KPL	HN	15.0	AML			07:17	53.40	16	0.20		
KAC	EZ	38.0	EP			07:17	54.52		0.02		
MDO	EZ	80.1	EP			07:18	01.40		0.16		
October 21 2010 Time: 22:30 04.2 UTC Magnitude: 1.9 ML											
Lat:	52.908N	Lon:	-1.206W			Depth:	6.8 km				
Grid Ref:	453.39 kmE	334.84 kmN				RMS:	0.20 secs				
Locality:	BEESTON,NOTTS										
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0											
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	Comment: C/F
CWF	HZ	20.1	EP			22:30	07.99		-0.20		
CWF	HN	20.1	ES			22:30	11.16		0.06		
CWF	HN	20.1	AML			22:30	11.34	202	0.14		
CWF	HE	20.1	AML			22:30	11.47	214	0.08		
STNC	HZ	70.1	EP			22:30	16.04		0.03		
STNC	HN	70.1	ES			22:30	24.82		0.19		
STNC	HE	70.1	AML			22:30	26.34	76	0.35		
STNC	HN	70.1	AML			22:30	26.88	35	0.17		
LHO	EZ	83.1	EP			22:30	18.13		0.07		
LMK	HZ	84.8	EP			22:30	18.34		0.07		
LMK	HN	84.8	ES			22:30	28.55		0.02		
LMK	HN	84.8	AML			22:30	30.97	89	0.24		
LMK	HE	84.8	AML			22:30	31.00	64	0.50		
SSW	EZ	114.0	EP			22:30	22.83		0.08		
HPK	HZ	120.0	EP			22:30	23.98		0.23		
HPK	HB	120.0	ES			22:30	37.51		-0.52		
HPK	HN	120.0	AML			22:30	39.91	70	0.22		
HPK	HE	120.0	AML			22:30	39.98	39	0.16		
HLM1	HZ	121.0	EP			22:30	23.80		-0.16		
HLM1	HE	121.0	ES			22:30	38.04		-0.35		
HLM1	HE	121.0	AML			22:30	38.86	12	0.17		
HLM1	HN	121.0	AML			22:30	40.21	12	0.18		
FOEL	HZ	134.0	EP			22:30	26.27		0.40		
FOEL	HE	134.0	ES			22:30	41.90		0.22		
MCH1	HZ	158.0	EP			22:30	28.84		-0.45		
MCH1	HE	158.0	ES			22:30	47.45		-0.16		
MCH1	HE	158.0	AML			22:30	48.44	20	0.30		
MCH1	HN	158.0	AML			22:30	48.89	15	0.19		
MONM	HN	161.0	EP			22:30	29.99		0.32		
October 22 2010 Time: 01:22 49.2 UTC Magnitude: 1.2 ML											
Lat:	53.295N	Lon:	-2.344W			Depth:	17.2 km				
Grid Ref:	377.07 kmE	377.65 kmN				RMS:	0.20 secs				
Locality:	KNUTSFORD,CHESHIRE										
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0											
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	Comment: C/F
STNC	HZ	24.5	IP		D	01:22	54.40		0.06		
STNC	HN	24.5	ES			01:22	58.28		0.19		
STNC	HN	24.5	AML			01:22	58.64	47	0.13		
STNC	HE	24.5	AML			01:22	59.29	44	0.43		
LHO	EZ	42.8	IP		C	01:22	56.63		-0.37		
FOEL	HZ	73.0	EP			01:23	01.42		-0.06		
FOEL	HE	73.0	ES			01:23	10.41		-0.03		
FOEL	HE	73.0	AML			01:23	11.26	2	0.16		
FOEL	HN	73.0	AML			01:23	13.33	4	0.20		
HPK	HZ	87.8	EP			01:23	03.88		0.33		
HPK	HE	87.8	ES			01:23	14.05		0.02		
HPK	HN	87.8	AML			01:23	15.04	25	0.24		
HPK	HE	87.8	AML			01:23	16.49	24	0.18		
CWF	HZ	93.1	EP			01:23	04.26		-0.05		
CWF	HE	93.1	ES			01:23	15.22		-0.11		
CWF	HN	93.1	AML			01:23	18.13	8	0.38		
CWF	HE	93.1	AML			01:23	18.61	8	0.32		
HLM1	HZ	93.7	EP			01:23	04.38		-0.05		
HLM1	HE	93.7	ES			01:23	15.33		-0.22		
HLM1	HN	93.7	AML			01:23	17.54	7	0.14		
HLM1	HE	93.7	AML			01:23	17.55	8	0.29		
MCH1	HZ	151.0	EP			01:23	13.11		0.55		
MCH1	HN	151.0	ES			01:23	30.31		0.70		
MCH1	HN	151.0	AML			01:23	31.31	5	0.19		
MCH1	HE	151.0	AML			01:23	31.95	4	0.16		
October 23 2010 Time: 08:58 01.1 UTC Magnitude: 1.2 ML											
Lat:	53.305N	Lon:	-2.348W			Depth:	16.7 km				
Grid Ref:	376.81 kmE	378.76 kmN				RMS:	0.20 secs				
Locality:	KNUTSFORD,CHESHIRE										
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0											
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	Comment: C/F
STNC	HZ	25.6	EP			08:58	06.46		0.07		
STNC	HN	25.6	ES			08:58	10.31		0.09		
STNC	HE	25.6	AML			08:58	10.89	34	0.34		
STNC	HN	25.6	AML			08:58	11.03	31	0.24		
LHO	EZ	42.3	EP			08:58	08.69		-0.15		
FOEL	HZ	73.4	EP			08:58	13.36		-0.15		
FOEL	HE	73.4	ES			08:58	22.87		0.33		
FOEL	HE	73.4	AML			08:58	22.95	5	0.62		
FOEL	HN	73.4	AML			08:58	25.49	7	0.52		
HPK	HE	87.0	ES			08:58	25.94		0.11		
HPK	HN	87.0	AML			08:58	27.00	22	0.19		
HPK	HE	87.0	AML			08:58	28.57	19	0.17		
CWF	HE	94.0	ES			08:58	27.59		0.05		
CWF	HE	94.0	AML			08:58	30.02	6	0.13		
CWF	HN	94.0	AML			08:58	30.13	7	0.29		
HLM1	HN	94.6	EP			08:58	16.38		-0.15		
HLM1	HE	94.6	ES			08:58	27.55		-0.21		
HLM1	HE	94.6	AML			08:58	29.40	8	0.22		
HLM1	HN	94.6	AML			08:58	29.61	6	0.11		
October 25 2010 Time: 04:12 23.7 UTC Magnitude: 1.8 ML											
Lat:	53.635N	Lon:	-1.007W			Depth:	1.4 km				
Grid Ref:	465.65 kmE	415.87 kmN				RMS:	0.40 secs				
Locality:	THORNE, S YORKSHIRE										
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0											
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	Comment: C/F
BWH	SZ	13.9	EP			07:50	37.71				-0.05
ESK	HZ	18.8	IP		C	07:50	38.72				0.15
ESK	HN	18.8	ES			07:50	41.14				-0.18
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0											
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	Comment: C/F
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	Comment: C/F
LMK	HZ	49.3	EP			04:12	32.60				-0.16
LMK	HE	49.3	ES			04:12	39.32				-0.04
LMK	HE	49.3	AML			04:12	41.48	126	0.76		
LHO	EZ	57.0	EP			04:12	33.31				-0.73
CWF	HZ	102.0	EP			04:12	41.50				0.57
CWF	HE	102.0	ES			04:12	53.40				-0.10
CWF	HE	102.0	AML			04:12	56.64	15	0.18		
CWF	HN	102.0	AML			04:12	56.73	17	0.32		
FOEL	HZ	168.0	EP			04:12	51.57				0.71
FOEL	HE	168.0	ES			04:13	10.99				0.32
FOEL	HE	168.0	AML			04:13	13.09	10	0.50		
KAC	EZ	118.0	EP			04:13	52.66				0.35
EAB	HZ	122.0	EP			04:13	52.85				-0.11
PGB1	HZ	135.0	EP			04:13	54.84				0.05
PGB1	HE</										

TABLE 2 : PHASE DATA

TABLE 2 : PHASE DATA

Grid Ref: 507.92 kmE -1.98 kmN	RMS: 0.40 secs	MCD	EZ	544.0	EP	12:31	25.30	-0.38
Locality: ENGLISH CHANNEL		MCD	EE	544.0	AML	12:32	37.79	41 0.36
Velocity model: Lownet Xnear: 500.0 Xfar: 1000.0		MCD	EN	544.0	AML	12:32	38.22	34 0.52
Comment: 105KM SSW OF BRIGHTON		MME1	EZ	546.0	EP	12:31	26.04	0.22
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES		DRUM	HZ	551.0	EP	12:31	26.73	0.28
JDG EZ 135.0 EP 14:10 06.71 -0.23		DRUM	HN	551.0	ES	12:32	20.01	0.09
JDG EN 135.0 ES 14:10 23.07 0.17		DRUM	HE	551.0	AML	12:32	28.07	66 0.50
JDC EZ 135.0 EP 14:10 06.73 -0.22		DRUM	HN	551.0	AML	12:32	28.31	58 0.56
JDC EN 135.0 ES 14:10 23.06 0.14		MVH1	EZ	573.0	EP	12:31	28.73	-0.61
JSA HZ 143.0 EP 14:10 07.94 -0.15		EDU	EZ	601.0	EP	12:31	32.89	0.04
JSA HE 143.0 ES 14:10 25.43 0.54		MDO	EZ	609.0	EP	12:31	33.02	-0.74
JSA HE 143.0 AML 14:10 26.70 6 0.30		ESY	EZ	634.0	EP	12:31	36.45	-0.37
JSA HN 143.0 AML 14:10 27.10 8 0.22		EDI	HN	658.0	ES	12:32	42.89	0.18
DYA HZ 253.0 EP 14:10 21.70 -0.69		EDI	HE	658.0	AML	12:32	49.68	47 0.56
DYA HN 253.0 ES 14:10 50.06 0.43		KSB	EZ	677.0	EP	12:31	41.32	68 0.62
DYA HN 253.0 AML 14:10 53.81 4 0.18		KPL	HE	682.0	AML	12:32	54.28	16 0.54
DYA HE 253.0 AML 14:10 58.24 4 0.42		KPL	HN	682.0	AML	12:32	59.35	13 0.88
December 18 2010 Time: 06:19 09.0 UTC Magnitude: 2.2 ML		EAB	EZ	689.0	EP	12:31	44.44	0.68
Lat: 57.462N Lon: -5.936W Depth: 3.7 km		ESK	HZ	708.0	EP	12:31	46.55	0.44
Grid Ref: 163.97 kmE 848.12 kmN RMS: 0.50 secs		ESK	HE	708.0	ES	12:32	53.97	0.32
Locality: APPLECROSS, HIGHLAND		ESK	HN	708.0	ES	12:32	55.33	
Velocity model: Lownet Xnear: 100.0 Xfar: 300.0		ESK	HN	708.0	AML	12:33	02.46	23 0.48
Comment: 8KM NW OF APPLECROSS		ESK	HE	708.0	AML	12:33	06.87	26 0.60
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES		December 21 2010 Time: 22:59 12.7 UTC Magnitude: 3.5 ML						
KPL HZ 21.8 IP C 06:19 13.25 0.07		Lat: 54.390N Lon: -3.146W Depth: 12.6 km						
KPL HN 21.8 ES 06:19 15.60 -0.62		Grid Ref: 325.59 kmE 500.01 kmN RMS: 0.60 secs						
KPL HE 21.8 AML 06:19 15.64 121 0.46		Locality: CONISTON,CUMBRIA						
KPL HN 21.8 AML 06:19 16.32 111 0.24		Velocity model: Lownet Xnear: 100.0 Xfar: 200.0						
KAC EZ 38.4 IP C 06:19 16.25 0.22		Comment: FELT CUMBRIA ... Intensity: 5						
KAC EZ 38.4 ES 06:19 20.79 -0.37		STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES						
KSB EZ 41.8 IP C 06:19 16.55 -0.09		KESW HZ 22.3 EP 22:59 16.96 -0.31						
RRR SZ 44.8 EP 06:19 16.91 -0.17		KESW HZ 22.3 AMPG 22:59 17.01 177 0.06						
RRR SN 44.8 ES 06:19 22.42 -0.54		KESW HN 22.3 ES 22:59 19.76 -0.81						
RRR SE 44.8 AML 06:19 22.60 203 0.26		KESW HZ 22.3 AMSG 22:59 20.32 4786 0.34						
RRR SN 44.8 AML 06:19 22.77 114 0.10		KESW HT 22.3 AMSG 22:59 20.33 14800 0.28						
RRH SZ 67.9 EP 06:19 20.17 -0.58		KESW HR 22.3 AMSG 22:59 20.38 5731 0.30						
MDO EZ 94.4 EP 06:19 25.11 0.19		KESW HE 22.3 AML 22:59 20.40 14244 0.32						
MDO EZ 94.4 ES 06:19 36.09 -0.45		KESW HN 22.3 AML 22:59 20.50 7450 0.30						
RSC SZ 109.0 EP 06:19 27.74 0.67		SLPK EZ 22.8 IP C 22:59 17.23 -0.06						
MVH1 EZ 117.0 IP D 06:19 28.55 0.24		SLPK EZ 22.8 AMPG 22:59 17.31 4956 0.09						
MCD EZ 161.0 EP 06:19 36.02 1.11		SLPK EN 22.8 ES 22:59 20.37 -0.24						
MCD EE 161.0 AML 06:19 56.34 121 0.20		SLPK ER 22.8 AMSG 22:59 20.67 15212 0.13						
MCD EN 161.0 AML 06:19 56.37 68 0.20		SLPK ET 22.8 AMSG 22:59 20.74 29605 0.18						
BIGH HZ 166.0 EP 06:19 36.78 1.24		SLPK EZ 22.8 AMSG 22:59 20.78 8363 0.14						
BIGH HN 166.0 AML 06:19 57.09 158 0.14		SLPK EE 22.8 AML 22:59 20.81 20398 0.15						
BIGH HE 166.0 AML 06:19 57.11 99 0.10		SLPK EN 22.8 AML 22:59 20.89 22394 0.14						
EAB EZ 172.0 EP 06:19 36.75 0.29		BCC EZ 69.8 EP 22:59 25.06 0.59						
MME1 EZ 179.0 EP 06:19 37.69 0.26		BCC EN 69.8 ES 22:59 32.91 -0.11						
PGB1 HZ 204.0 EP 06:19 40.67 0.20		BCC EE 69.8 AML 22:59 34.08 4413 0.28						
PGB1 HE 204.0 AML 06:20 10.55 24 0.64		BCC EN 69.8 AML 22:59 35.70 1255 0.22						
PGB1 HN 204.0 AML 06:20 11.04 24 0.68		BHH SZ 78.4 IP D 22:59 26.21 0.39						
EDU EZ 205.0 EP 06:19 41.16 0.57		BHH SN 78.4 AML 22:59 36.39 3056 0.46						
DRUM HZ 217.0 EP 06:19 42.45 0.34		BHH SE 78.4 AML 22:59 39.05 2453 0.32						
DRUM HN 217.0 AML 06:20 16.62 25 0.36		BWH SZ 93.4 IP D 22:59 28.69 0.54						
DRUM HE 217.0 AML 06:20 17.51 23 0.36		BWH SN 93.4 AML 22:59 30.13 0.53						
ESK HZ 292.0 EP 06:19 51.57 0.07		BWH SE 93.4 IP D 22:59 29.75 0.17						
ESK HN 292.0 AML 06:20 34.95 7 0.58		EBS HZ 103.0 ES 22:59 41.38 -0.49						
ESK HE 292.0 AML 06:20 35.36 7 0.72		EBS HN 103.0 AML 22:59 43.67 659 0.07						
December 20 2010 Time: 00:43 25.0 UTC Magnitude: 3.4 ML		EBS HE 103.0 AML 22:59 44.93 937 0.24						
Lat: 59.871N Lon: 5.067W Depth: 10.0 km		GAL1 HZ 114.0 EP C 22:59 31.20 0.08						
Grid Ref: 795.18 kmE 1130.60 kmN RMS: 0.40 secs		GAL1 HN 114.0 ES 22:59 44.33 -0.20						
Locality: NORWEGIAN COAST Velocity model: North Sea Xnear: 750.0 Xfar: 1500.0		GAL1 HE 114.0 AML 22:59 44.94 707 0.38						
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES		GAL1 HN 114.0 AML 22:59 45.92 1200 0.26						
YELL EZ 349.0 EP 00:44 12.69 -0.21		WME EZ 134.0 EP C 22:59 34.65 0.67						
LRW HZ 350.0 EP 00:44 13.35 0.41		WPM1 EZ 136.0 IP C 22:59 35.04 0.82						
LRW HN 350.0 AML 00:45 11.74 23 0.44		WLF1 HZ 148.0 EP C 22:59 34.60 -1.28						
LRW HE 350.0 AML 00:45 13.27 24 0.62		WLF1 HE 148.0 ES 22:59 51.21 -1.56						
SAN1 EZ 353.0 EP 00:44 13.32 -0.02		WLF1 HE 148.0 AML 22:59 54.73 721 0.23						
WALL EZ 375.0 EP 00:44 16.04 -0.01		FOEL HZ 167.0 EP 22:59 37.57 -1.01						
BIGH HZ 535.0 EP 00:44 35.53 -0.47		FOEL HE 167.0 ES 22:59 55.52 -1.91						
BIGH HN 535.0 ES 00:45 28.04 0.22		FOEL HE 167.0 AML 23:00 02.84 726 0.66						
BIGH HN 535.0 AML 00:45 34.28 48 0.46		FOEL HN 167.0 AML 23:00 03.14 1114 0.64						
BIGH HE 535.0 AML 00:45 35.06 41 0.72		EDI HZ 171.0 EP 22:59 38.44 -0.53						
MCD EZ 545.0 EP 00:44 37.64 0.44		EDI HN 171.0 AML 23:00 02.70 538 0.31						
MCD EE 545.0 AML 00:45 38.51 26 0.46		EDI HE 171.0 AML 23:00 02.74 635 0.32						
MCD EN 545.0 AML 00:45 41.56 27 0.58		YRE EZ 178.0 IP C 22:59 40.56 0.65						
MME1 EZ 546.0 EP 00:44 37.46 0.02		PGB1 HZ 180.0 EP 22:59 39.40 -0.72						
DRUM HZ 551.0 EP 00:44 37.97 0.05		PGB1 HE 180.0 AML 23:00 02.77 449 0.52						
DRUM HN 551.0 AML 00:45 43.18 30 0.36		PGB1 HN 180.0 AML 23:00 09.61 440 0.40						
DRUM HE 551.0 AML 00:45 51.51 41 0.52		HLM1 HZ 209.0 EP 22:59 43.00 -0.82						
MVH1 EZ 575.0 EP 00:44 40.18 -0.77		HLM1 HE 209.0 ES 23:00 04.90 -1.61						
EDU EZ 601.0 EP 00:44 44.02 -0.24		HLM1 HZ 209.0 AML 23:00 11.43 325 0.58						
ESY EZ 633.0 EP 00:44 48.04 -0.11		HLM1 HE 209.0 AML 23:00 13.03 450 0.32						
EDI HN 657.0 ES 00:45 53.80 -0.23		EAB EZ 214.0 EP 22:59 43.50 -0.92						
EDI HE 657.0 AML 00:45 59.35 20 0.42		CWF HZ 220.0 EP 22:59 44.69 -0.51						
EDI HN 657.0 AML 00:46 02.35 39 0.48		CWF HN 220.0 AML 23:00 16.58 155 0.22						
EAB EZ 690.0 EP 00:44 56.10 0.91		CWF HE 220.0 AML 23:00 18.67 207 0.46						
ESK HZ 707.0 AML 00:46 12.52 9 0.38		LPW BZ 261.0 EP 22:59 49.39 -0.81						
ESK HN 707.0 AML 00:46 13.85 17 0.52		LPW BN 261.0 AML 23:00 25.06 335 0.30						
December 20 2010 Time: 12:30 13.6 UTC Magnitude: 3.8 ML		LPW BE 261.0 AML 23:00 26.63 340 0.24						
Lat: 59.914N Lon: 5.010W Depth: 10.0 km		MCH1 HZ 266.0 IP D 22:59 50.64 -0.31						
Grid Ref: 791.49 kmE 1135.03 kmN RMS: 0.50 secs		MCH1 HE 266.0 ES 23:00 17.87 -0.97						
Locality: NORWEGIAN COAST Velocity model: North Sea Xnear: 750.0 Xfar: 1500.0		MCH1 HN 266.0 AML 23:00 27.42 227 0.42						
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES		MCH1 HE 266.0 AML 23:00 36.19 228 0.50						
YELL EZ 345.0 EP 12:31 01.18 0.23		MONB HZ 285.0 EP 22:59 52.95 -0.28						
LRW HZ 346.0 EP 12:31 01.77 0.71		STRD HZ 298.0 EP 22:59 54.82 -0.11						
SAN1 EZ 349.0 EP 12:31 01.69 0.21		OLDB HZ 306.0 EP 22:59 55.67 -0.22						
WALL EZ 371.0 EP 12:31 04.56 0.40		BATH HZ 333.0 EP 22:59 59.20 0.00						
BIGH HZ 533.0 EP 12:31 23.91 -0.42		SWN1 HZ 333.0 EP 22:59 59.57 0.35						
BIGH HN 533.0 ES 12:32 15.59 -0.38		SWN1 HE 333.0 AML 23:00 56.21 248 0.54						
BIGH HN 533.0 AML 12:32 23.59 101 0.58		SWN1 HN 333.0 AML 23:00 57.86 258 0.56						
BIGH HE 533.0 AML 12:32 23.64 88 0.48		MDO EZ 348.0 EP 23:00 00.35 -0.85						

TABLE 2 : PHASE DATA

MCD	EZ	356.0	EP	23:00	01.09	-1.02		MCD	EE	603.0	AML	05:15	29.57	21	0.56
MCD	EN	356.0	AML	23:00	55.62	165 0.36		MCD	EN	603.0	AML	05:15	30.48	13	0.32
MCD	EE	356.0	AML	23:00	58.12	140 0.78		EDI	HZ	624.0	EP	05:14	31.48		0.21
HTL	HZ	389.0	EP	23:00	05.73	-0.45		EDI	HN	624.0	ES	05:15	30.40		0.16
MVH1	EZ	399.0	EP	23:00	06.01	-1.49		EDI	HE	624.0	AML	05:15	39.40	14	0.42
								EDI	HN	624.0	AML	05:15	40.03	28	0.42
December 22 2010			Time: 05:13 10.5 UTC			Magnitude: 3.5 ML		ESK	HZ	647.0	EP	05:14	33.63		-0.55
Lat: 57.119N			Lon: 6.727W			Depth: 23.6 km		ESK	HN	647.0	ES	05:15	34.98		-0.30
Grid Ref: 927.56 kME			836.93 kmN			RMS: 0.30 secs		ESK	HN	647.0	AML	05:15	39.12	19	0.22
Locality: EASTERN NORTH SEA								ESK	HE	647.0	AML	05:15	39.71	33	0.38
Velocity model: North Sea Xnear: 750.0 Xfar: 1500.0								BIGH	HZ	650.0	EP	05:14	34.19		-0.29
Comment: 530KM EAST OF ABERDEEN								BIGH	HE	650.0	ES	05:15	36.13		0.32
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES								BIGH	HE	650.0	AML	05:15	41.16	27	0.34
DRUM HZ 560.0 EP 05:14 23.42						0.13		BIGH	HN	650.0	AML	05:15	42.20	21	0.36
DRUM HN 560.0 ES 05:15 16.61						0.16		MDO	EZ	669.0	EP	05:14	37.01		0.10
DRUM HN 560.0 AML 05:15 21.47					74 0.68			EAB	EZ	686.0	EP	05:14	39.13		0.18
DRUM HE 560.0 AML 05:15 21.54					47 0.62			PGB1	HZ	705.0	EP	05:14	41.65		0.27
LRW HZ 569.0 EP 05:14 24.81					0.44			PGB1	HE	705.0	ES	05:15	48.08		0.35
LRW HE 569.0 ES 05:15 18.11					-0.20			PGB1	HN	705.0	AML	05:15	52.53	21	0.24
LRW HE 569.0 AML 05:15 25.62				6	0.44			PGB1	HE	705.0	AML	05:15	53.74	37	0.52
LRW HN 569.0 AML 05:15 33.57				6	0.38			KSB	EZ	734.0	EP	05:14	44.73		-0.25
ESY EZ 590.0 EP 05:14 27.10					0.05			KPL	HZ	747.0	EP	05:14	46.34		-0.21
EDU EZ 597.0 EP 05:14 28.11					0.13			KPL	HE	747.0	AML	05:16	00.94	7	0.38
MCD EZ 603.0 EP 05:14 28.41					-0.21			KPL	HE	747.0	AML	05:16	05.80	7	0.54
MCD EN 603.0 ES 05:15 25.17					-0.49										

TABLE 3

GEOGRAPHIC COORDINATES OF SEISMOGRAPH STATIONS, 2010

Code	Name	Lat	Lon	E (km)	N (km)	Ht (m)	Comp
ABA1	BACONSTHORPE	52.8884	1.1453	611.58	337.00	74	1R
AEA	EAST ANGLIA UNIV	52.6208	1.2403	619.30	307.53	45	3M
AEU	EAST ANGLIA	52.6202	1.2347	618.93	307.45	28	SMR
APAE	PACKWAY	52.3006	1.4782	637.12	272.68	58	1R
AWH	WHINBURGH	52.6297	0.9507	599.67	307.68	64	1R
AWI1	WITTON	52.8319	1.4471	632.17	331.65	46	1R
BATH	BATH	51.4429	-2.3292	377.22	171.60	131	BBR
BBH	BRUNTSHEIL	55.1333	-2.9299	340.72	582.50	216	1R
BBO1	BOTHEL	54.7367	-3.2464	319.76	538.69	209	3R
BCC1	CHAPELCROSS	55.0153	-3.2201	321.99	569.66	138	1SMR
BDL	DOBCROSS HALL	54.8030	-2.9385	339.68	545.76	157	1R
BHH	HOWATS HILL	55.0931	-3.2181	322.27	578.31	216	3R
BIGH	UPPER BIGHOUSE	58.4932	-3.9102	288.75	957.69	70	BBR
BTA	TALKIN	54.9057	-2.6844	356.12	557.00	279	3R
BWH	WARDLAW	55.1758	-3.6549	294.62	588.09	269	1R
CCA1	CARNMENELLIS	50.1866	-5.2277	169.62	36.90	210	BBR
CWF	CHARNWOOD FST	52.7385	-1.3076	446.74	315.91	203	BBR
DRUM	DRUMTOCHTY	56.9123	-2.4865	370.48	780.23	208	BBR
DYA	YADSWORTHY	50.4353	-3.9310	262.88	61.34	292	BBR
EAB	ABERFOYLE	56.1887	-4.3373	254.97	702.02	279	1R
EAU	AUCHINOON	55.8454	-3.4474	309.38	662.30	359	1R
EBH	BLACK HILL	56.2476	-3.5084	306.54	707.13	375	1R
EBL	BROAD LAW	55.7723	-3.0445	334.48	653.71	436	1R
ECK	CAULDKAINE HILL	55.1810	-3.1292	328.10	588.00	351	1R
EDI	EDINBURGH	55.9233	-3.1875	325.80	670.66	125	BBR
EDU	DUNDEE	56.5477	-3.0110	337.85	739.97	421	1R
ELO	LOGIEALMOND	56.4703	-3.7112	294.59	732.21	523	1R
ELSH	ELHAM	51.1482	1.1345	619.32	143.44	126	BBR
ESK	ESKDALEMUIR	55.3165	-3.2052	323.52	603.16	261	3MLGBBR
ESY	STONEYPATH	55.9175	-2.6141	361.62	669.55	337	1R
FOEL	FOEL WYLFA	52.8898	-3.2012	319.27	333.15	449	BBR
GAL1	GALLOWAY	54.8664	-4.7114	226.02	555.78	117	3MLGBBR
GCD	CASTLE DOUGLAS	54.8630	-3.9403	275.48	553.76	184	1R
GCL	CUSHENDALL	55.0783	-6.1264	136.66	583.77	278	1R
GMK	MULL OF KINTYRE	55.3458	-5.5934	172.19	611.64	164	1R
GMM	MTNS OF MOURNE	54.2377	-5.9498	142.66	489.67	155	1R
HEX	EXMOOR	51.0664	-3.8026	273.71	131.28	230	1R
HGH	GRAY HILL	51.6379	-2.8057	344.25	193.59	223	1R
HLM1	LONG MYND	52.5184	-2.8807	340.25	291.57	429	BBR
HMNX	HERSTMONCEUX	50.8674	0.3363	564.49	110.15	26	BBR
HPE	PEMBROKE	51.9372	-4.7746	209.29	230.21	349	1R
HPK	HAVERAH PARK	53.9581	-1.6241	424.66	451.42	233	BBR
HSA	SWANSEA	51.7500	-4.1532	251.38	207.94	293	1R
HTL	HARTLAND	50.9943	-4.4849	225.64	124.66	86	3MLGSMBBR
HTR	TREWERN HILL	52.0785	-3.2679	313.12	243.04	337	1R
INVG	INVERGELDIE	56.4273	-4.0452	273.96	727.99	279	BBR
JDC	DAM (CREST)	49.1947	-2.0469			39	SMR
JDG	DAM (GALLERY)	49.1947	-2.0469			7	SMR
JLP	LES PLATONS	49.2486	-2.1039			129	1R
JQE	QUEENS EAST	49.2000	-2.0383			58	1R
JRS	MAISON ST LOUIS	49.1922	-2.0922			56	3LGR
JSA	ST AUBINS	49.1878	-2.1717			39	BBR
JVM	VALLE D.L.MARE	49.2169	-2.2067			64	1R
KAC	ACHNASHELLACH	57.4989	-5.2988	202.36	850.19	206	1R
KBI1	BIRLEY GRANGE	53.2543	-1.5279	431.49	373.17	272	1R
KESW	KESWICK	54.5886	-3.1048	328.70	522.05	282	BBR
KEY2	KEYWORTH	52.8790	-1.0770	462.13	331.73	76	SMR
KPL	PLOCKTON	57.3391	-5.6527	180.21	833.50	13	3LGSMBBR
KS8	SHIEL BRIDGE	57.2099	-5.4214	193.40	818.40	417	1R

TABLE 3

GEOGRAPHIC COORDINATES OF SEISMOGRAPH STATIONS, 2010

Code	Name	Lat	Lon	E (km)	N (km)	Ht (m)	Comp
KSY	SYSTON	52.9642	-0.5872	494.88	341.73	121	1R
KTG1	TILBROOK GRNGE	52.3264	-0.4019	508.90	271.06	83	1R
KUF	UFFORD	52.6170	-0.3907	508.94	303.39	38	1R
KWE	WEAVER FARM	53.0164	-1.8412	410.65	346.61	328	1R
LCP	CASSOP	54.7370	-1.4744	433.84	538.14	185	1R
LHO	HOLMEFIRTH	53.5453	-1.8548	409.62	405.44	462	1R
LMK1	MARKET RASEN	53.4573	-0.3274	511.15	396.92	133	BBR
LRN	RICHMOND	54.4165	-1.8007	412.93	502.37	313	1R
LRW	LERWICK	60.1360	-1.1779	445.66	1139.27	98	3MLGBBR
LWH	WHINNY NAB	54.3338	-0.6717	486.36	493.97	277	1R
MCD	COLEBURN DISTIL	57.5828	-3.2541	325.02	855.42	293	3MLGSMR
MCH1	MICHAELCHURCH	51.9974	-2.9983	331.47	233.74	219	SMBBR
MDO	DOCHFOUR	57.4409	-4.3633	258.17	841.39	415	1R
MLA1	LATHERON	58.3055	-3.3627	320.15	935.98	188	1R
MME1	MEIKLE CAIRN	57.3149	-2.9647	341.90	825.32	475	1R
MONM	MONMOUTH	51.8396	-2.8054	344.61	215.98	145	BBR
MVH1	ACHVAICH	57.9250	-4.1825	270.75	894.90	185	1R
OLDB	OLDBURY	51.6609	-2.5514	361.95	195.94	6	BBR
PCO1	CORRIE	55.9880	-4.1002	269.00	679.21	267	1R
PGB1	GLENIFFERBRAES	55.8115	-4.4837	244.38	660.37	199	BBR
PMS1	MUIRSIEL	55.8459	-4.7452	228.15	664.82	351	1R
POB1	OBSERVATORY	55.8458	-44299	247.88	664.06	34	MLGR
REB	EISG-BRACHAIDH	58.1194	-5.2802	206.82	919.16	100	1R
RRH	RHENIGIDALE	57.9197	-6.6881	122.43	901.86	103	1R
RRR	RUBHA REIDH	57.8577	-5.8067	174.19	891.68	61	3MLGSMR
RSC	SCOURIE	58.3485	-5.1683	214.61	944.33	60	1R
RTO	TOLSTA	58.3778	-6.2092	153.95	950.93	74	1R
SAN1	SANDWICK	60.0179	-1.2392	442.41	1126.08	150	1R
SKP1	KOPHILL	51.7218	-0.8096	482.22	203.29	212	1R
SMD	MENDIPS	51.3083	-2.7170	350.03	156.88	310	1R
SOFL	SORNFELLI	62.0689	-6.9658			721	BBR
SSW	STOW-ON-WOLD	51.9667	-1.8499	410.31	229.86	291	1R
STNC	STOKE	53.0913	-2.2062	354.95	386.19	234	BBR
STRD	STROUD	51.7763	-2.1643	388.77	208.64	200	BBR
SWK	WARMINSTER	51.1483	-2.2471	382.72	138.87	266	1R
SWN1	SWINDON	51.5137	-1.8007	413.83	179.49	192	3MLGSMBBR
WAL1	WALLS	60.2564	-1.6173	421.18	1152.46	167	1R
WIM	ISLE OF MAN (South)	54.1475	-4.6738	225.39	475.73	386	1R
WLF1	LLYNFAES	53.2894	-4.3966	240.27	379.65	58	BBR
WME	MYNDD EILIAN	53.3969	-4.3032	246.88	391.40	129	1R
WPM1	PENMAENMAWR	53.2581	-3.9048	272.95	375.18	353	1R
XAL	ALLENDALE	54.8617	-2.2147	386.22	551.91	458	1R
XSO	SOURHOPE	55.4924	-2.2510	384.14	622.10	516	1R
YEL1	YELL	60.5509	-1.0830	450.29	1185.55	203	1R
YLL	LLANBERIS	53.1402	-4.1704	254.84	362.57	159	1R
YRC	RHOSCOLYN	53.2508	-4.5753	228.21	375.77	22	1R
YRE	YR EIFL	52.9810	-4.4254	237.19	345.42	197	1R

Component Codes:

- 1 Single vertical seismometer
 3 Orthogonal set of 3 seismometers
 M Low-frequency microphone
 LG Single low-gain vertical seismometer
 SM Strong motion seismometers
 BB Broadband Instrument
 R Station coordinates registered with the International Seismological Centre (ISC), England and the National Earthquake Information Centre (NEIC), USA

TABLE 4
Depth / crustal velocity models used in earthquake locations

Structural area	Depth to top of layer (km)	P-wave velocity (km/sec)	Vp/Vs
North Sea	0.00	6.20	1.73
	12.00	6.50	
	23.00	7.10	
	31.00	8.05	
Lownet and general UK	0.00	4.00	1.73
	2.52	5.90	
	7.55	6.45	
	18.87	7.00	
	34.15	8.00	
Borders	0.00	4.10	1.71
	3.00	5.60	
	4.10	6.15	
	17.00	6.60	
	30.00	8.00	
North Wales (Lleyn)	0.00	5.40	1.68
	2.00	6.05	
	13.00	6.50	
	25.00	6.80	
	34.00	8.00	
Mid Wales	0.00	5.40	1.72
	3.80	6.05	
	15.50	6.65	
	34.30	8.00	
Cornwall	0.00	5.50	1.77
	0.30	5.76	
	15.00	6.90	
	30.00	8.00	

Appendix 1 Key to Bulletin Encoding

YearMoDy	Year, month and day of event.
HrMn Secs	Time of occurrence of event in hours, mins and secs, (UTC).
Lat	Latitude of the event, positive latitude indicates north.
Lon	Longitude of the event, positive longitude indicates eest.
kmE	UK National Grid Reference in kilometres east of grid origin.
kmN	UK National Grid Reference in kilometres north of grid origin.
Dep	Depth of the hypocentre in kilometres.
Mag	Richter local magnitude of the event.
Locality	A geographical indication of the epicentral area, usually the nearest town followed by the region. A key to the abbreviations used in the locality column are given below.
Int	Maximum EMS intensity. 2+ indicates felt, no macroseismic details. 3+, 4+ etc indicates felt at 3 or 4, but no survey carried out. 3, 4, 5 etc describes the maximum EMS intensity produced by the event.
Comments	Additional comments about the event eg: C/F, see below under comments abbreviations.

The following abbreviations are extracted from the output of the location program HYPO71 (Lee and Lahr, 1975)

No	Total number of P and S readings used in the event location.
Gap	Largest azimuthal separation in degrees between stations.
RMS	Root Mean Square of the travel time residuals in seconds.
ERH	Standard error of the epicentre in kilometres. When this column is blank, the error is large and indeterminate.
ERZ	Standard error of the focal depth in kilometres. When this column is blank, the error is large and indeterminate.

Locality abbreviations

Sonic	Sonic boom
Bucks	Buckinghamshire
D & G	Dumfries and Galloway
Lincs	Lincolnshire
Notts	Nottinghamshire
Staffs	Staffordshire

Comments abbreviations

... and felt elsewhere

N,S,E,W North, South, East, West

Appendix 2 Key to Phase Data Encoding

Time	Time of occurrence of event in hours, mins and secs, (UTC).
Lat	Latitude of the event, N indicates North.
Lon	Longitude of the event, W indicates West, E indicates East.
Depth	Depth of the hypocentre in kilometres.
Grid Ref	UK National Grid Reference in kilometres east (kmE) and kilometres north (kmN) of grid origin.
RMS	Root Mean Square of the travel time residuals in seconds.
Velocity Model	Velocity model used in location.
Magnitude	Richter local magnitude of the event.
Locality	A geographical indication of the epicentral area, usually the nearest town followed by the region.
Intensity	Maximum EMS intensity. 2+ indicates felt, no macroseismic details. 3+, 4+ etc indicates felt at 3 or 4, but no survey carried out. 3, 4, 5 etc describes the maximum EMS intensity produced by the event.
Comments	Additional comments about the event eg: C/F see list of comments abbreviations below.
STAT	Station name
CO	Station component S=short period Z=vertical N=north south E=east west
DIST	Distance from earthquake to station (km)
PHAS	Phase identifier; the first letter characterizes onset E=emergent I=impulsive, the second indicates the phase eg P, S, PG and PN. AML
WT	Hypo weighting factor to arrival. 0 or blank=full weighting to 4=zero weighting (ignore). 9=use P S interval only for this line.
P	Polarity C=Compression/up D=Dilatation/down
HrMn	Hour, Minute of event
SECS	Seconds of event
AMPL	Amplitude centre to peak in nanometres (nm)
PERI	Period in seconds
RES	Station residual

Appendix 3 The European Macroseismic Scale (EMS 98)

1 - Not felt

Not felt, even under the most favourable circumstances.

2 - Scarcely felt

Vibration is felt only by individual people at rest in houses, especially on upper floors of buildings.

3 - Weak

The vibration is weak and is felt indoors by a few people. People at rest feel a swaying or light trembling.

4 - Largely observed

The earthquake is felt indoors by many people, outdoors by very few. A few people are awakened. The level of vibration is not frightening. Windows, doors and dishes rattle. Hanging objects swing.

5 - Strong

The earthquake is felt indoors by most, outdoors by few. Many sleeping people awake. A few run outdoors. Buildings tremble throughout. Hanging objects swing considerably. China and glasses clatter together. The vibration is strong. Top heavy objects topple over. Doors and windows swing open or shut.

6 - Slightly damaging

Felt by most indoors and by many outdoors. Many people in buildings are frightened and run outdoors. Small objects fall. Slight damage to many ordinary buildings eg; fine cracks in plaster and small pieces of plaster fall.

7 - Damaging

Most people are frightened and run outdoors. Furniture is shifted and objects fall from shelves in large numbers. Many ordinary buildings suffer moderate damage: small cracks in walls; partial collapse of chimneys.

8 - Heavily damaging

Furniture may be overturned. Many ordinary buildings suffer damage: chimneys fall; large cracks appear in walls and a few buildings may partially collapse.

9 - Destructive

Monuments and columns fall or are twisted. Many ordinary buildings partially collapse and a few collapse completely.

10 - Very destructive

Many ordinary buildings collapse.

11 - Devastating

Most ordinary buildings collapse.

12 - Completely devastating

Practically all structures above and below ground are heavily damaged or destroyed.

-----****-----

A complete description of the EMS-98 scale is given in: Grunthal, G., (Ed) 1998. European Macroseismic scale 1998. Cahiers du Centre European de Geodynamique et de Seismologie. Vol 15.