

Bulletin of British Earthquakes 2009

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 2010. Bulletin
of British Earthquakes 2009.
*British Geological Survey
Internal Report, OR/10/028*

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 2009 Seismicity	5
Acknowledgements.....	8
References	9
Figures	10
Tables.....	19
Appendix 1 Key to Bulletin Encoding	38
Appendix 2 Key to Phase Data Encoding.....	39
Appendix 3 The European Macroseismic Scale (EMS 98)	40

FIGURES

Figure 1. Epicentre map of earthquakes in 2009 as listed in Table 1.

Figure 2. Seismograph stations operated by BGS during 2009 (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 2009.

Figure 4. Epicentres of earthquakes with magnitudes of 3.5 ML and above, in the period 1970 to 2009.

Figure 5. Seismograms of the ground displacement from the Ulverston, Cumbria earthquake, 28 April 2009, recorded by BGS seismograph stations.

Figure 6. Seismograms of the ground displacement from the Shetland Islands earthquake, 15 January 2009, recorded by BGS seismograph stations.

Figure 7. Seismograms of the ground displacement from the Folkestone, Kent earthquake, 3 March 2009, recorded by BGS seismograph stations.

Figure 8. Seismograms of the ground displacement from the Goxhill, N Lincolnshire earthquake, 11 April 2009, recorded by BGS seismograph stations.

Figure 9. Seismograms of the ground displacement from the Maesteg, Bridgend earthquake, 5 June 2009, recorded by BGS seismograph stations.

TABLES

Table 1. Catalogue of events in chronological order: 2009.

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 2009, listed in Tables 1 and 2. Maps showing seismic activity in 2009 (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 air-borne 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 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 2009. 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. Small events may go undetected unless they are felt and reported to BGS by local inhabitants, so the detection capabilities of this process are 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 2009. The data set is considered complete for these magnitudes in all localities onshore. Seismicity for the period 1970 to 2009 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 Ao is that for a 'standard' magnitude zero earthquake at the same distance. The Ao 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, Ao, 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 2009 Seismicity

There were 86 earthquakes located by the BGS seismic monitoring network during the year, with 26 having magnitudes of 2.0 ML or greater and six having magnitudes of 3.0 ML or greater. Eleven events with a magnitude of 2.0 ML or greater were reported felt, together with a further four smaller ones, bringing the total to fifteen felt earthquakes in 2009.

The largest onshore earthquake of the year, with a magnitude of 3.7 ML, occurred near Ulverston, Cumbria, on 28 April at 10:22 UTC, at a depth of approximately 11 km (Figure 5). Data from over 800 questionnaires, collected online, were used to determine how widely the earthquake had been felt, with the most distant reports coming from the following places: to the north, Carlisle (80 km); to the northeast, Durham and Newcastle (115-135 km); to the southeast, Harrogate and Leeds (100 km); and to the south, Manchester (95 km). The results show that the highest intensity experienced was 5 EMS, which was observed over an area extending approximately 25 kilometres to the northeast and 35 kilometres to the south of the epicentre. Ulverston returned a high number of replies (over 80) being the closest, small settlement to the epicentre, and the highly populated Lancaster/Morecambe area returned over 400 replies. There were no reports of damage to property. The last earthquake in the region of comparable size had a magnitude of 3.0 ML and occurred around 12 km to the northeast, near Grange-over-Sands, in 1993. Historically, the most significant earthquake to have struck the area was in 1835 centred near Lancaster. It had a magnitude of 4.4 ML and caused some minor damage.

One of the largest offshore earthquakes, of 2009, occurred near the Shetland Islands on 15 January, at 05:32 UTC, with a magnitude of 3.3 ML (Figure 6). It was located approximately 50 km east of Lerwick and was felt throughout the Shetland mainland. Some reports stated that people were woken from sleep and that a few were frightened, indicating an intensity of at least 4 EMS. This was the largest earthquake to strike the region since a magnitude 3.5 ML earthquake on 12 October 2002, with an epicentre approximately 85 km to the southeast. On 15 September another earthquake, with a magnitude of 3.3 ML, occurred in the southern North Sea region, approximately 100 km east of Hull. A further four events occurred in the North Sea and adjacent waters during the year, with magnitudes ranging between 1.7 and 3.0 ML.

On 25 February, an earthquake with a magnitude of 1.4 ML was detected 6 km southeast of the town of Llanberis, Gwynedd. The BGS received a few reports from residents in Llanberis,

describing "the house shook gently" and "my cup seemed to shudder". An intensity of 3 EMS was assigned to the earthquake.

An earthquake with a magnitude of 3.0 ML and at a depth of around 4 km occurred on 3 March, with a location under Folkestone, Kent (Figure 7). The BGS received several reports from residents in Folkestone and surrounding areas describing the earthquake as being "quick but very scary and noisy", "like an explosion" and with "quite strong rumbling". Some people described the event as being like "a large lorry driven by" or that it "felt like a pneumatic drill on the floor" and others reported that "crockery shook and rattled noticeably" and "the whole room rumbled and the desk shuddered", indicating an intensity of 4 EMS. It was around 200 times smaller than the magnitude 4.3 ML earthquake that struck Folkestone on 28 April 2007, causing some damage. Significant earthquakes also struck the Dover Straits in 1776 and 1580; the latter had an approximate magnitude of 5.7 ML and reportedly caused damage in London.

A magnitude 1.9 ML earthquake occurred on 24 March, with an epicentre about 3 km northwest of Bonawe, Argyll & Bute. The BGS received several reports from residents of Bonawe, Taynuilt, Connel and North Connel, describing, "the windows shook", "the house rattled and dust was lifted from shelves" and "it sounded very much like a distant explosion", indicating an intensity of at least 3 EMS. It locates approximately 24 km east of the magnitude 4.1 ML Oban earthquake of 29 September 1986 which was felt over an area of around 30,000 km² with a maximum intensity of 5 EMS.

On 11 April, an earthquake with a magnitude of 3.0 ML occurred near Goxhill, North Lincolnshire, approximately 10 km southeast of the centre of Hull (Figure 8). It was felt by several residents in the surrounding areas. Reports described the earthquake as being "a very short thud through the floor", "a weak rumble, then intensified before stopping" and "the oven grill shelving rattled", indicating an intensity of 3 EMS. This earthquake was around 2,000 times smaller in terms of energy release than the magnitude 5.2 ML earthquake that struck nearby at Market Rasen on 27 February 2008, causing some damage. Historically, an earthquake with a magnitude of 4.2 ML occurred on 15 December 1703 approximately 10 km to the southeast.

On 5 June, a magnitude 2.9 ML earthquake occurred in the Maesteg, Bridgend region of South Wales (Figure 9). The BGS received many reports from the Media and from residents in Bridgend describing "lying in bed and metal frame shook", "the whole house creaked and it felt like it moved", "the experience felt like a car had collided with the house" and "heard a rumbling sound". An intensity of 4 EMS was assigned to the earthquake. This is the largest event to occur in this general area since a magnitude 3.8 ML earthquake on 23 May 1975, approximately 7 km southwest of Merthyr Tydfil. Historically, however, larger earthquakes, with magnitudes ranging from 4.9 to 5.2 ML, have been known to occur in the area, the last and largest of these being a magnitude 5.2 ML earthquake that occurred in 1906 close to Port Talbot. Known as the Swansea earthquake, this was one of the most damaging earthquakes in Britain throughout the whole of the 20th century.

A magnitude 2.2 ML earthquake occurred on 26 July, with an epicentre approximately 5 km south of Wylfa on the Isle of Anglesey, North Wales. The BGS received a few reports from the residents of Llanfachraeth and Camaes Bay describing "a deep roaring noise, immediately followed by the house shaking and the windows rattling", indicating an intensity of 3 EMS.

An earthquake with a magnitude of 2.9 ML occurred at 13:04 UTC on 30 September, with a location 2 km northwest of Alkborough, North Lincolnshire. An intensity of 3 EMS was assigned to this event after a single report was received from a resident in Brigg describing, "a small quick rumble" and "the TV creaked". The epicentre is approximately 30 km east of the magnitude 3.0 ML Goxhill earthquake on 11 April 2009 and 40 km northwest of the magnitude 5.2 ML Market Rasen earthquake on 27 February 2008.

On 16 November, a magnitude 2.0 ML earthquake occurred near Oban, Argyll and Bute. A number of reports were received from residents in Oban, describing “the house seemed to shake” and “various objects rattled”, indicating an intensity of 3 EMS. It locates approximately 15 km east of the magnitude 4.1 ML Oban earthquake of 29 September 1986 which was felt over an area of around 30,000 km² with a maximum intensity of 5 EMS.

On 13 December, an earthquake with a magnitude of 2.3 ML was detected 4 km south of the settlement of Salen, on the Isle of Mull, Argyll and Bute. Reports were received that it was felt in Salen, Sanna, Savary, Croggan, Strontian and Stromemore with intensities of at least 3EMS.

The following day, on 14 December, a magnitude 2.4 ML earthquake occurred near the village of Llangurig, Powys. The BGS received two reports from residents in the area describing “heard a rumbling similar to that of horses galloping nearby” and “the dogs downstairs all began to bark”, indicating an intensity of 3 EMS.

In Staffordshire, two events on 24 and 25 December with magnitudes of 2.1 ML and 1.7 ML, respectively, occurred near Stoke-on-Trent. The magnitude 2.1 ML event was felt (intensity 3 EMS) by three people in the town who described “a slight tremor” and “the windows and door shuddered”.

Between 8 August and 19 October, a swarm of nine small earthquakes were detected approximately 8 km SSE of Eskdalemuir, in an area between Eskdalemuir, in the Borders, and Langholm, in Dumfries and Galloway. These events occurred, at an average depth of 4.8 km and with magnitudes ranging between 0.3 and 2.4 ML.

The BGS received reports of another two earthquakes being felt during the year. They occurred on 11 April, near Stithians, Cornwall (1.4 ML) and on 10 October, near Swinton, Greater Manchester (1.5 ML).

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

BNFL Magnox Generation

British Nuclear Fuels plc

Health and Safety Executive

HM Nuclear Installations Inspectorate

Jersey Water

Natural Environment Research Council

Department of Communities and Local Government

Scottish & Southern Energy plc

Scottish Power

Scottish Water

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**.
- Lienert, B.R.E., and Havskov, J., 1995. A computer program for locating earthquakes both locally and globally, *Seis. Res. Lett.*, **66**, 26-36.
- Ottemoller, L. ,S. Sargeant, and B. Baptie, The ML 5.2 Lincolnshire earthquake in 2008: A high stress drop event, EGU, Vienna, 2009.
- Richter, C., 1935. An instrumental earthquake magnitude scale, *Bull.Seism. Soc.Am.*,**25**, 1-32.



Figure 1. Epicentre map of earthquakes in 2009 as listed in Table 1.

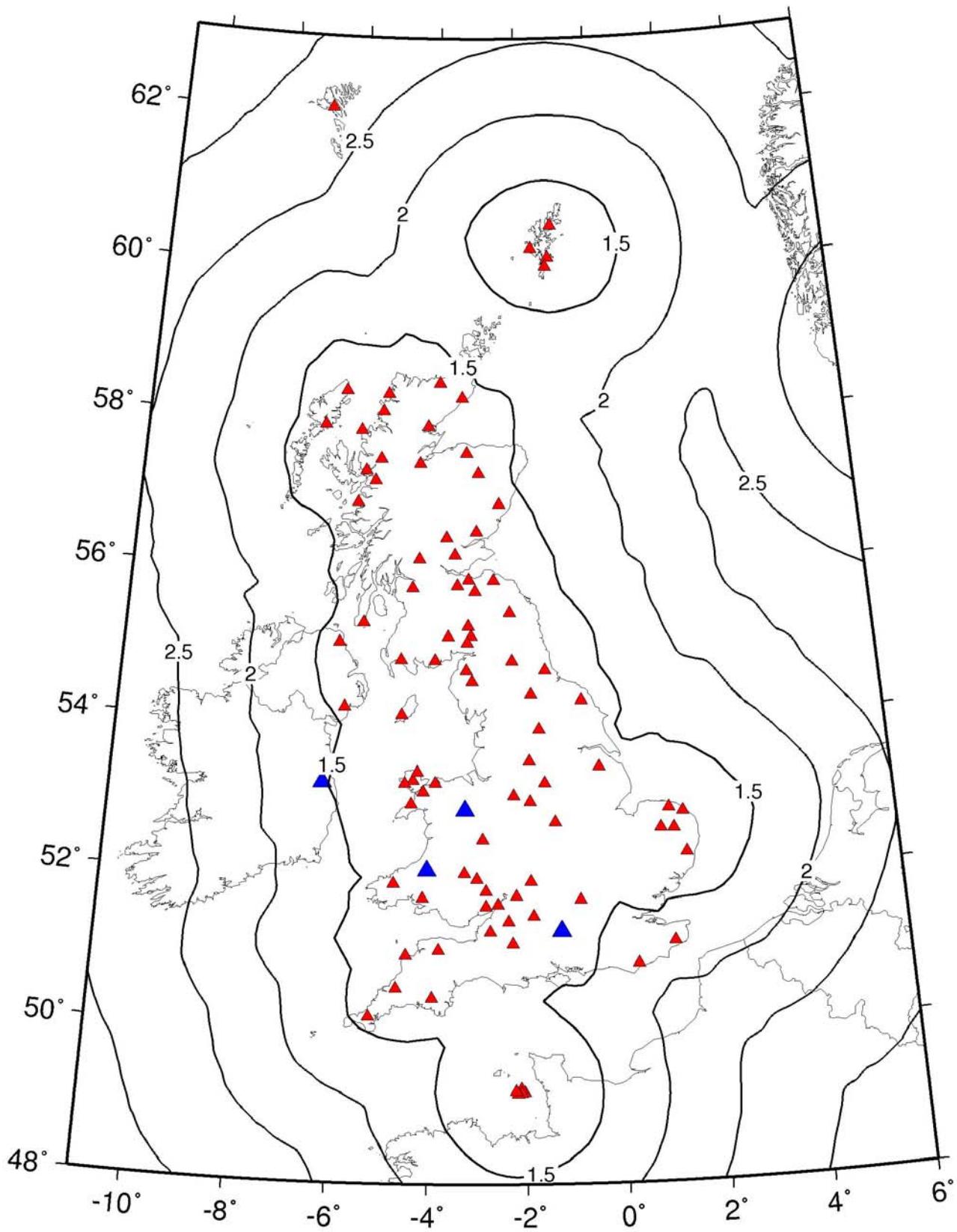


Figure 2. Seismograph stations operated by BGS during 2009 (red) along with station operated by other agencies in the British Isles and used for automatic detection (blue). The contours show earthquake detection capability in terms of Richter local magnitude (ML) calculated for average background noise conditions (4nm) where the detection criterion is that the signal has to exceed 4nm at 10Hz at 4 stations.

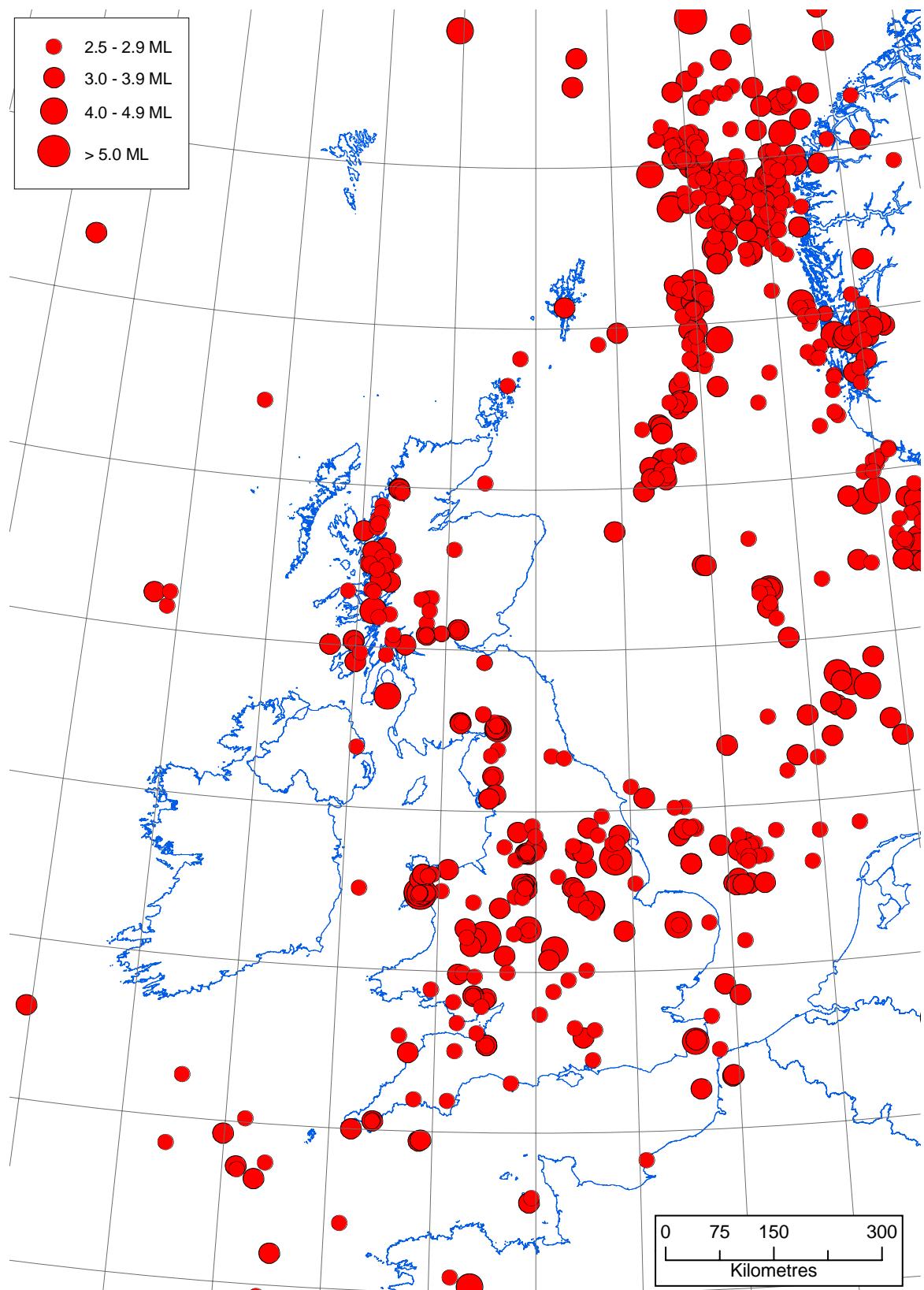


Figure 3. Epicentres of earthquakes with magnitudes of 2.5 ML and above, in the period 1979 to 2009.



Figure 4. Epicentres of earthquakes with magnitudes of 3.5 ML and above, in the period 1970 - 2009.

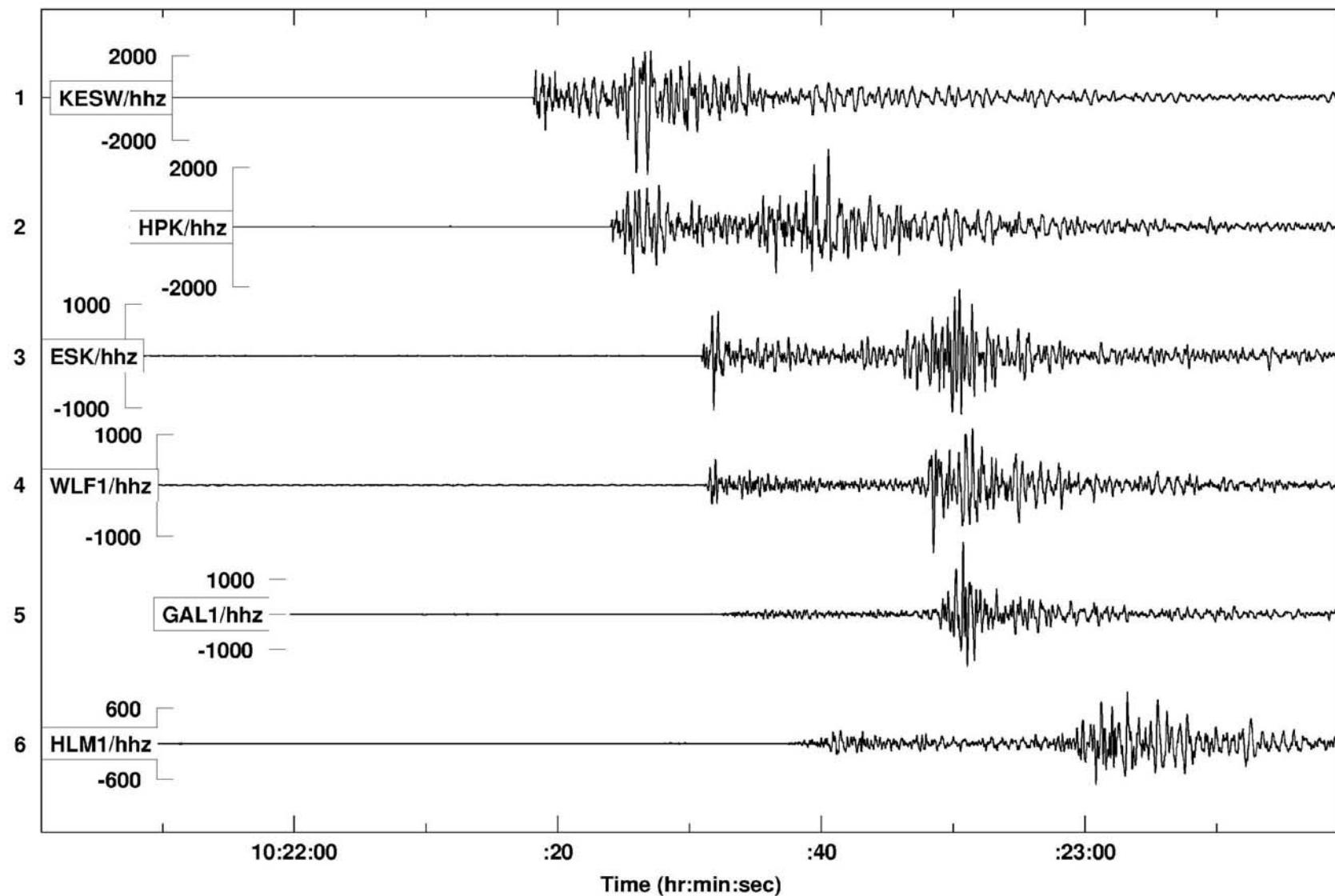


Figure 5. Seismograms of the ground displacement from the Ulverston, Cumbria earthquake, 28 April 2009, recorded by BGS seismograph stations.

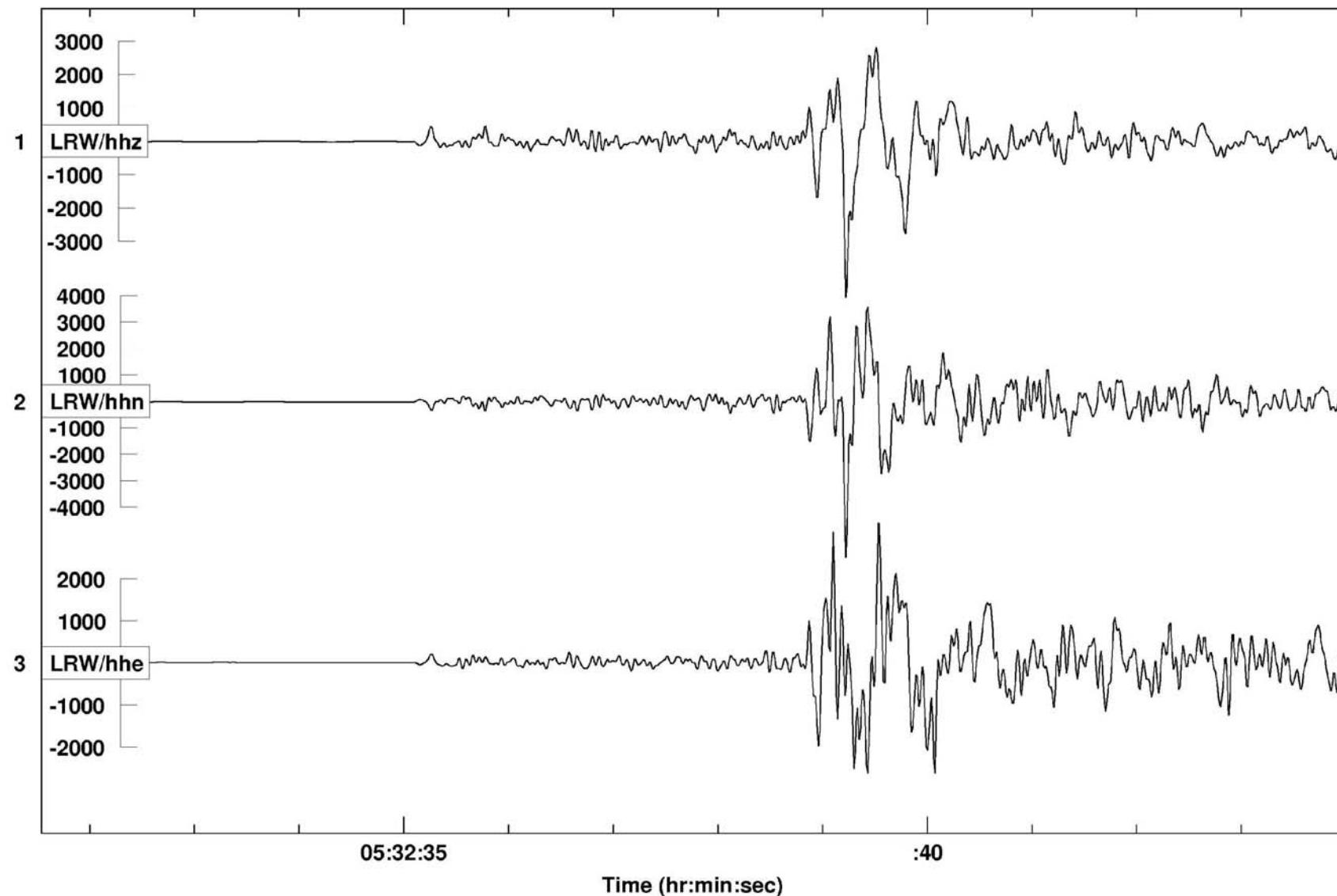


Figure 6. Seismograms of the ground displacement from the Shetland Islands earthquake, 15 January 2009, recorded by BGS seismograph stations.

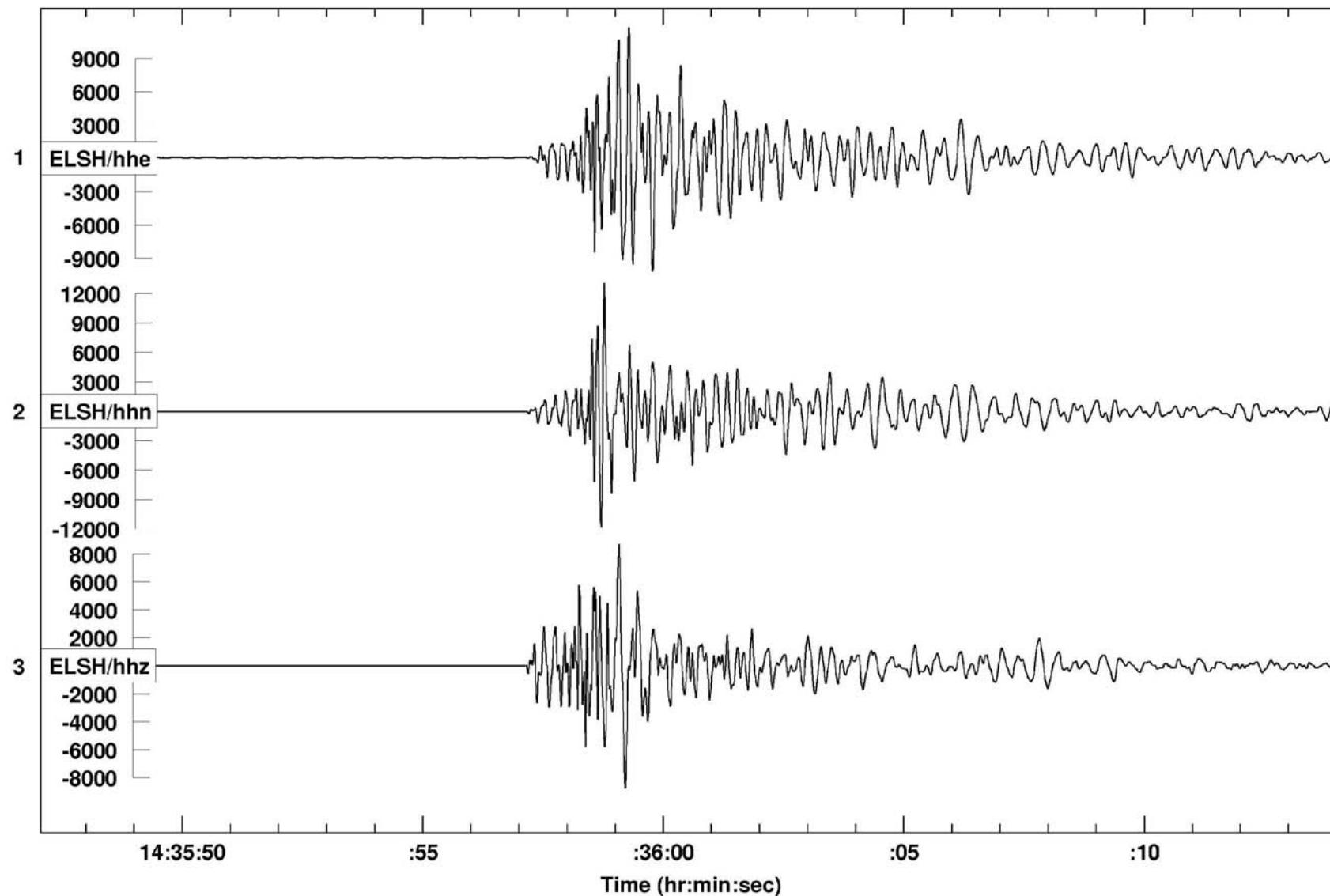


Figure 7. Seismograms of the ground displacement from the Folkestone, Kent earthquake, 3 March 2009, recorded by BGS seismograph stations.

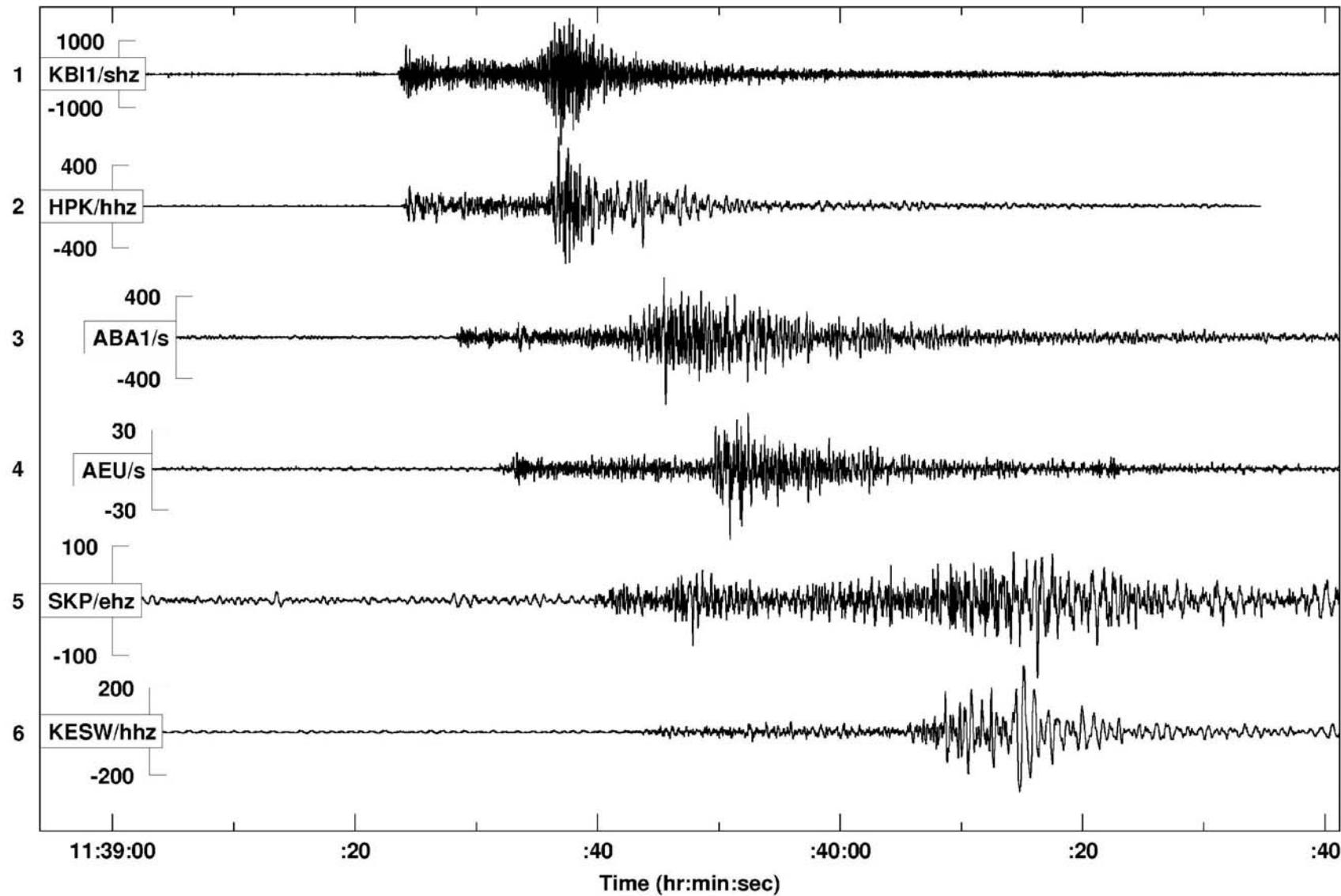


Figure 8. Seismograms of the ground displacement from the Goxhill, North Lincolnshire earthquake, 11 April 2009, recorded by BGS seismograph stations.

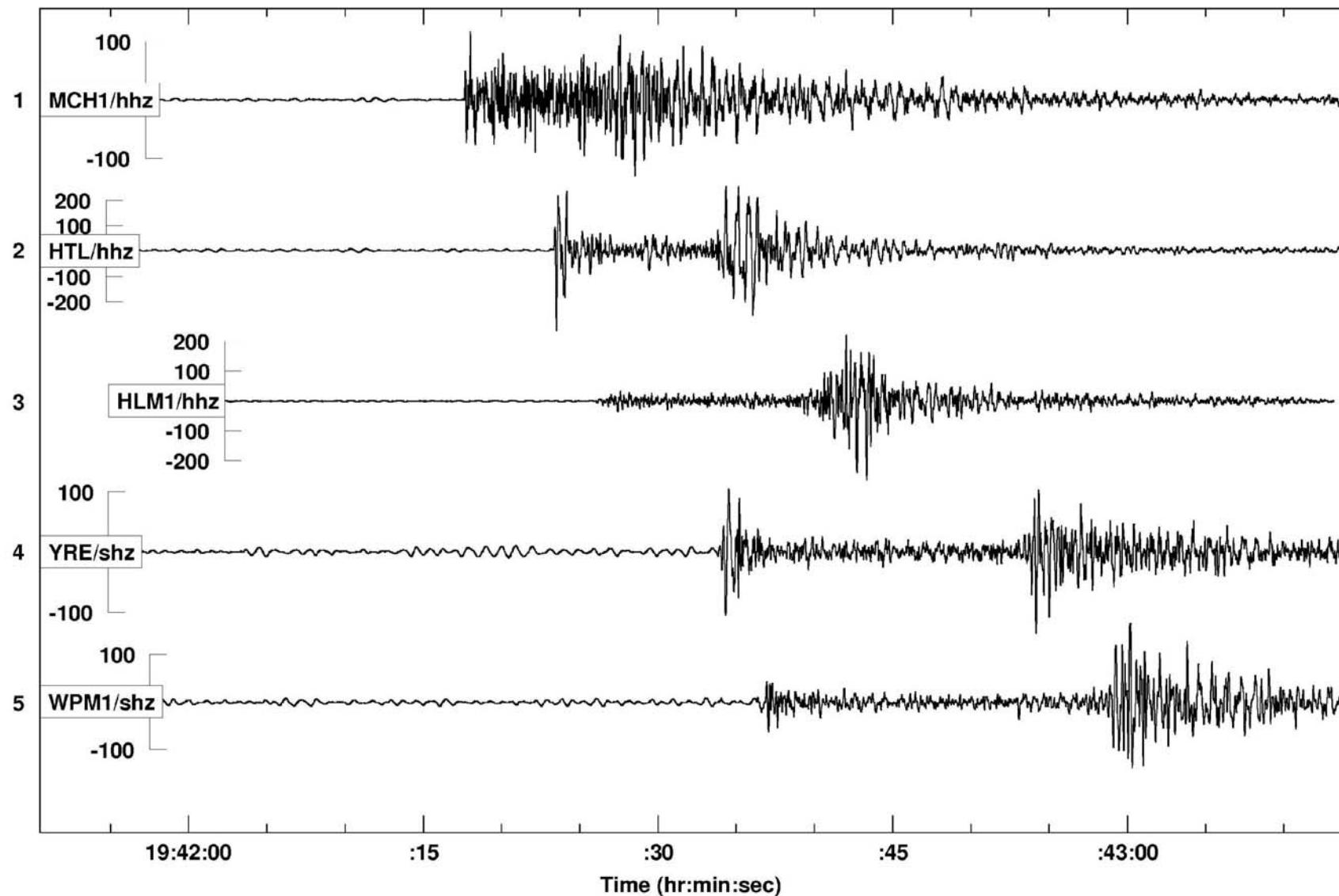


Figure 9. Seismograms of the ground displacement from the Maesteg, Bridgend earthquake, 5 June 2009, recorded by BGS seismograph stations.

TABLE 1 : CATALOGUE OF EVENTS : 2009

Year	Mo	Dy	Hr	Mn	Secs	Lat	Lon	kmE	kmN	Dep	Mag	Locality	Int	No	Gap	RMS	ERH	ERZ	Comments
2009	01	01	14	54	20.8	55.07	-3.63	296.0	575.9	3.1	1.1	DUMFRIES, D & G		9	149	0.40	3.91	0.80	
2009	01	02	01	43	38.0	55.08	-3.65	294.8	577.2	2.7	1.0	DUMFRIES, D & G		9	104	0.30	3.36	3.40	
2009	01	03	19	00	14.9	55.08	-3.64	295.3	577.5	2.5	1.1	DUMFRIES, D & G		11	104	0.40	4.38	7.10	
2009	01	04	10	55	41.7	58.09	-3.17	330.9	912.3	4.7	1.3	MORAY FIRTH		4	279	0.10	7.95	3.50	EAST OF HELMSDALE
2009	01	05	08	59	47.1	55.09	-3.63	295.7	578.7	2.4	1.2	DUMFRIES, D & G		9	102	0.40	4.55	4.90	
2009	01	08	01	42	02.3	53.27	-2.14	390.8	374.5	11.2	0.8	MACCLESFIELD, CHESHIRE		5	241	0.30	1.72	6.20	
2009	01	10	23	26	42.5	56.75	-4.37	255.3	764.6	6.5	2.4	LOCH ERICHT, HIGHLAND		14	145	0.40	8.13	8.50	
2009	01	15	05	32	22.7	60.27	-1.28	439.7	1153.6	28.9	3.3	SHETLAND ISLANDS	4	14	192	0.60	2.93	4.70	FELT SHETLAND
2009	01	20	06	51	05.9	49.20	-3.23	310.6	-77.4	13.1	2.1	ENGLISH CHANNEL		6	250	0.20	9.78	8.60	80KM WEST OF JERSEY
2009	02	01	08	45	43.9	55.08	-3.64	295.6	577.3	2.7	1.2	DUMFRIES, D & G		13	104	0.80	8.82	4.20	
2009	02	15	10	35	60.0	52.44	-2.64	356.7	282.1	17.4	1.1	LUDLOW, SHROPSHIRE		3	258	0.00	1.02	0.30	
2009	02	22	13	18	53.4	56.45	-5.29	197.1	733.4	5.2	1.8	BONawe, ARGYLL/BUTE		13	203	0.20	5.44	4.80	4KM WEST OF BONawe
2009	02	23	00	58	04.6	50.60	1.01	613.1	82.3	5.0	1.6	ENGLISH CHANNEL		5	228	0.60			55KM S OF FOLKESTONE
2009	02	25	19	54	60.0	53.07	-4.07	261.3	355.0	5.8	1.4	LLANBERIS, GWYNEDD	3	8	152	0.30	4.53	5.10	FELT LLANBERIS
2009	02	28	10	11	50.8	64.72	0.57			10.3	3.0	NORWEGIAN SEA		5	246	0.30	4.23	2.40	500KM NNE OF LERWICK
2009	03	03	14	35	55.9	51.12	1.18	622.4	140.1	3.6	3.0	FOLKESTONE, KENT	4	23	135	0.50	8.10	2.30	FELT FOLKESTONE...
2009	03	04	12	04	27.1	51.53	-3.05	326.9	181.6	12.6	1.6	NEWPORT, SOUTH WALES		5	117	0.10	1.64	2.00	
2009	03	16	02	46	09.1	55.93	-5.13	204.4	675.1	7.2	1.2	DUNOON, ARGYLL/BUTE		10	217	0.30	7.92	7.20	13KM WSW OF DUNOON
2009	03	24	07	52	34.7	56.48	-5.25	199.6	736.5	7.5	1.9	BONawe, ARGYLL/BUTE	3	14	199	0.50	3.16	0.90	FELT NORTH CONNEL..
2009	03	29	03	02	43.4	52.17	-3.15	321.6	253.5	15.1	1.1	GLADESTRY, POWYS		5	181	0.20	0.32	7.00	
2009	04	07	03	05	15.9	51.90	-3.22	316.2	223.1	4.8	0.8	BRECON, POWYS		4	315	0.10	9.01	9.80	12KM SE OF BRECON
2009	04	08	22	25	20.9	55.81	-5.57	176.6	663.3	9.6	1.5	TARBERT, ARGYLL/BUTE		11	206	0.40	7.76	6.60	9KM SW OF TARBERT
2009	04	11	11	39	07.2	53.70	-0.25	515.6	423.7	15.3	3.0	GOXHILL, NORTH LINCS	3	29	160	0.60	5.85	9.80	FELT HULL, SWANLAND...
2009	04	11	23	33	27.0	50.19	-5.15	175.1	37.5	3.2	1.4	STITHIANS, CORNWALL	3	4	315	0.20	6.38	1.00	FELT CROWLAS & RINSEY
2009	04	20	02	39	54.6	54.44	-3.52	301.7	505.6	2.5	0.7	BECKERMET, CUMBRIA		6	245	0.30	2.05	3.80	
2009	04	22	14	12	206.9	55.82	-3.19	325.1	659.4	4.5	2.0	PENICUIK, MIDLOTHIAN		12	56	0.50	4.35	0.00	
2009	04	28	10	22	09.4	54.16	-2.99	335.2	473.8	9.6	3.7	ULVERSTON, CUMBRIA	5	38	103	0.40	5.03	3.40	FELT CUMBRIA, LANCS
2009	05	01	02	33	21.0	55.10	-3.63	296.1	580.2	3.7	0.6	DUMFRIES, D & G		6	100	0.30	3.64	5.30	
2009	05	01	18	21	137.4	56.18	-4.06	272.0	700.3	7.0	1.5	DOUNE, STIRLING		8	84	0.50	6.85	9.60	
2009	05	03	17	35	08.0	55.84	-3.21	324.2	661.0	6.7	0.7	PENICUIK, LOTHIAN		5	95	0.50	0.74	9.70	
2009	05	07	11	08	25.0	56.40	-5.69	172.2	728.6	12.9	1.8	ISLE OF MULL		11	231	0.20	9.97	5.80	EAST MULL
2009	05	11	13	08	00.0							SONIC - EYEMOUTH	2						FELT EYEMOUTH...
2009	06	04	04	25	32.8	56.17	-4.76	228.4	701.1	11.6	1.5	LOCH LONG, ARGYLL/BUTE		14	159	0.60	9.81	6.70	3KM SSW OF ARROCHAR
2009	06	05	19	42	07.1	51.62	-3.65	286.1	192.9	3.6	2.9	MAESTEG, BRIDGEND	3	22	121	0.50	4.48	6.10	FELT BRIDGEND...
2009	06	10	04	59	56.4	51.81	-3.42	301.9	213.0	12.3	1.9	VAYNOR, MERTHYR TYDFIL		12	115	0.30	2.73	2.80	
2009	06	14	09	07	28.9	56.10	-4.33	255.0	692.1	3.2	1.6	BUCHLYVIE, STIRLING		14	134	0.50	9.14	0.20	
2009	06	17	01	57	16.5	49.84	-4.88	192.6	-3.0	6.0	1.3	LIZARD POINT, CORNWALL		6	263	0.40	0.78	7.10	25KM SE OF LIZARD PT
2009	06	21	23	43	14.0	56.68	-5.28	199.0	758.7	7.2	1.4	LOCH LINNHE, HIGHLAND		13	191	0.30	7.09	6.90	4KM SW OF ONICH
2009	06	28	00	05	21.0	56.24	-3.73	293.1	706.8	5.3	1.6	BLACKFORD, PERTH/KINROS		18	72	0.60	4.70	0.60	4KM SE OF BLACKFORD
2009	06	28	00	18	02.2	53.31	-0.33	511.2	381.0	17.8	1.5	MARKET RASEN, LINCS		3	281	0.40	2.67	7.70	
2009	06	30	01	47	20.8	50.59	-1.32	448.4	77.2	5.1	1.5	CHALE, ISLE OF WIGHT		10	130	0.50	7.45	8.60	NEAR BLACKGANG CHINE
2009	07	01	19	24	09.4	52.27	2.98	739.9	275.8	8.4	2.1	SOUTHERN NORTH SEA		6	285	0.10	8.23	5.80	125KM ENE OF IPSWICH
2009	07	06	23	09	34.5	56.09	-4.33	254.8	690.9	2.7	1.2	BUCHLYVIE, STIRLING		8	133	0.40	6.96	5.00	

TABLE 1 : CATALOGUE OF EVENTS : 2009

Year	Mo	Dy	Hr	Mn	Secs	Lat	Lon	kmE	kmN	Dep	Mag	Locality	Int	No	Gap	RMS	ERH	ERZ	Comments
2009	07	07	21	49	24.5	53.25	-1.81	412.7	372.9	1.1	2.0	BUXTON, DERBYSHIRE		4	121	0.20	2.33	2.00	COLLAPSE EVENT
2009	07	08	15	42	47.7	55.39	-4.21	260.1	612.9	7.8	0.8	CUMNOCK, EAST AYRSHIRE		6	146	0.60	3.73	9.60	
2009	07	16	10	40	56.0	57.15	-5.30	200.3	811.7	4.5	1.7	SHIEL BRIDGE, HIGHLAND		7	214	0.50	7.99	3.80	
2009	07	21	18	38	26.9	55.86	-5.21	199.5	667.8	7.5	1.3	KYLES OF BUTE		7	249	0.40	0.40	9.90	
2009	07	22	05	16	17.6	55.21	-2.94	340.0	591.3	8.3	0.9	LANGHOLM, D & G		7	199	0.30	7.71	9.20	7KM NE OF LANGHOLM
2009	07	23	17	52	06.5	56.10	-4.29	257.3	692.2	4.2	1.0	BUCHLYVIE, STIRLING		6	145	0.50	9.02	8.40	
2009	07	26	12	17	31.6	53.37	-4.46	236.1	389.1	7.5	2.2	ISLE OF ANGLESEY	3	11	146	0.20	1.66	1.00	FELT LLANFACHRAETH...
2009	07	26	22	46	30.9	59.70	1.72	609.2	1095.9	10.0	2.4	NORTHERN NORTH SEA		5	300	0.30	2.93	0.00	170KM ESE OF LERWICK
2009	07	27	11	11	15.9	58.59	-4.85	234.3	970.9	4.1	1.4	DURNESS, HIGHLAND		9	264	0.30	0.60	3.30	
2009	08	08	14	42	28.8	55.23	-3.49	305.3	593.8	4.2	2.4	JOHNSTONEBRIDGE, D & G		16	73	0.40	3.76	5.50	
2009	08	08	14	47	37.7	55.24	-3.47	306.5	594.6	4.7	0.3	JOHNSTONEBRIDGE, D & G		4	189	0.10	2.39	9.00	
2009	08	08	14	50	34.7	55.23	-3.48	305.6	593.5	4.9	1.2	JOHNSTONEBRIDGE, D & G		7	81	0.50	5.83	8.50	
2009	08	08	18	17	05.5	55.23	-3.49	305.4	594.2	5.2	0.7	JOHNSTONEBRIDGE, D & G		6	187	0.30	4.17	6.20	
2009	08	09	10	30	07.6	55.23	-3.49	305.5	594.4	4.7	0.8	JOHNSTONEBRIDGE, D & G		6	142	0.30	4.49	5.10	
2009	08	10	14	38	33.5	55.23	-3.49	305.2	593.4	5.3	1.4	JOHNSTONEBRIDGE, D & G		8	112	0.40	6.05	7.10	
2009	08	14	08	28	52.8	55.23	-3.50	304.4	594.0	4.5	1.7	JOHNSTONEBRIDGE, D & G		15	74	0.40	3.99	6.10	
2009	08	27	13	45	02.8	60.14	-0.25	497.1	1140.7	10.0	1.7	SHETLAND ISLANDS		1	360	0.00	0.82	0.00	50KM EAST OF LERWICK
2009	08	27	22	53	21.2	52.77	-2.14	390.8	318.6	5.2	1.1	STAFFORD, STAFFORDSHIRE		6	178	0.40	8.80	4.20	
2009	09	03	17	23	07.6	57.81	-5.63	184.1	885.6	3.9	1.2	LOCH EWE, HIGHLAND		7	142	0.10	1.39	2.00	
2009	09	07	23	06	20.0	55.23	-3.48	305.6	593.9	5.2	1.2	JOHNSTONEBRIDGE, D & G		12	73	0.40	4.20	5.10	
2009	09	15	00	30	22.2	53.74	1.12	605.6	432.2	5.7	3.3	SOUTHERN NORTH SEA		30	207	0.60	0.67	9.80	95KM EAST OF HULL
2009	09	19	15	33	54.7	55.83	-5.33	191.4	665.1	6.3	1.4	TARBERT, ARGYLL & BUTE		9	194	0.30	6.78	2.10	
2009	09	26	17	57	07.2	53.16	-1.72	418.6	362.1	13.7	1.9	BAKEWELL, DERBYSHIRE		11	114	0.30	4.34	3.40	6KM SW OF BAKEWELL
2009	09	30	13	04	56.7	53.70	-0.69	486.7	423.7	13.1	2.9	ALKBOROUGH, NORTH LINCS	3	5	196	0.40	8.24	5.00	FELT BRIGG...
2009	10	06	05	05	55.4	51.77	-4.10	255.1	210.4	11.7	2.5	LLANNON, CARMARTHENSHIR		18	146	0.50	5.06	6.10	
2009	10	07	11	36	07.5	50.63	-1.90	407.4	81.3	0.0	2.1	OFFSHORE SWANAGE	3	11	155	0.40	4.25	0.00	MINE DETONATION
2009	10	10	04	17	37.7	53.50	-2.33	378.0	400.6	7.9	1.5	SWINTON, GTR MANCHESTER	3	9	141	0.40	5.50	5.00	FELT SWINTON
2009	10	13	10	38	42.2	50.60	-1.60	428.0	78.3	0.0	2.3	OFFSHORE ALUM BAY	3	14	118	0.50	4.43	0.00	MINE DETONATION
2009	10	14	11	27	30.0	50.60						SONIC - COLERAINE	2	1					FELT COLERAINE
2009	10	19	09	05	55.5	55.24	-3.47	306.7	595.4	4.5	0.9	JOHNSTONEBRIDGE, D & G		6	142	0.30	4.00	3.40	
2009	10	23	13	34	30.9	55.85	-3.84	284.8	663.8	0.0	2.0	QB, SHOTTS, STRATHCLYDE	3	10	68	0.30	2.42	0.00	FELT SHOTTS
2009	10	24	17	12	21.3	49.45	-5.60	139.4	-43.5	5.0	2.1	LIZARD POINT, CORNWALL		3	331	0.70	5.14	0.00	60KM SW OF LIZARD PT
2009	10	26	16	42	19.7	51.71	-5.16	181.7	206.1	0.0	2.1	OFFSHORE MILFORD HAVEN	3	14	181	0.50	7.34	0.00	MINE DETONATION
2009	11	10	15	34	03.1	55.84	-3.78	288.6	662.3	0.0	2.2	QB, SHOTTS, STRATHCLYDE	2	10	118	0.50	6.62	0.00	FELT SHOTTS
2009	11	16	15	43	15.4	56.41	-5.41	189.5	729.7	7.7	2.0	OBAN, ARGYLL & BUTE	3	12	213	0.40	5.26	1.00	FELT OBAN
2009	11	25	01	21	18.2	49.27	-6.14	99.2	-62.2	5.0	2.2	ISLES OF SCILLY		3	341	0.80	4.48	0.00	70KM S OF ST ANGUS
2009	12	02	17	52	25.9	51.70	-3.24	314.5	200.6	8.5	2.1	BARGOED, CAERPHILLY		12	86	0.30	2.68	3.50	
2009	12	09	05	29	07.0	53.25	-1.82	411.9	372.8	1.1	1.6	BUXTON, DERBYSHIRE		7	121	0.20	3.49	2.60	COLLAPSE TYPE
2009	12	13	05	39	54.2	56.48	-5.96	156.3	738.4	11.2	2.3	ISLE OF MULL	3	14	191	0.30	7.76	7.30	FELT ISLE OF MULL...
2009	12	14	23	20	51.4	52.41	-3.69	285.3	280.8	6.1	2.4	LLANGURIG, POWYS	3	23	104	0.50	3.13	8.00	FELT GROSMONT...
2009	12	15	15	25	26.3	51.71	-4.08	256.0	203.2	8.2	1.6	LLANELLI, CARMARTHENSHIR		11	151	0.30	3.04	5.00	
2009	12	17	15	26	16.5	53.05	-2.96	335.3	350.2	7.5	2.0	WREXHAM, WREXHAM		15	106	0.30	3.09	6.60	
2009	12	21	00	07	21.0	56.13	-3.91	281.3	694.2	9.2	1.3	CAMBUSKENNETH, STIRLING		7	120	0.20	4.62	3.30	

TABLE 1 : CATALOGUE OF EVENTS : 2009

Year	Mo	Dy	Hr	Mn	Secs	Lat	Lon	kmE	kmN	Dep	Mag	Locality	Int	No	Gap	RMS	ERH	ERZ	Comments
2009	12	24	15	45	58.6	56.14	-3.91	281.3	696.1	11.1	2.1	CAMBUSKENNETH, STIRLING		10	70	0.20	2.75	3.60	
2009	12	24	16	12	42.9	53.02	-2.17	388.3	346.7	0.5	2.1	STOKE-ON-TRENT, STAFFS	3	11	121	0.30	3.90	2.40	FELT STOKE
2009	12	25	09	00	09.8	53.01	-2.17	388.8	345.9	0.9	1.7	STOKE-ON-TRENT, STAFFS		11	141	0.40	5.37	3.20	
2009	12	27	11	02	21.1	53.50	-2.23	385.0	400.8	3.4	1.5	GREATER MANCHESTER		8	83	0.40	4.56	0.10	
2009	12	28	23	31	03.4	49.01	-2.09	393.5	-99.0	5.0	1.8	JERSEY, CHANNEL ISLES		3	312	0.40	8.13	0.00	20KM S OF JERSEY
2009	12	31	06	26	55.3	52.83	-2.62	358.5	326.0	5.6	0.7	MARKET DRAYTON, SALOP		5	276	0.20	5.98	4.90	12KM SW OF M DRAYTON
2009	12	31	17	57	04.1	52.83	-2.61	359.1	325.8	6.1	1.1	MARKET DRAYTON, SALOP		5	276	0.20	5.95	4.70	12KM SW OF M DRAYTON

TABLE 2 : PHASE DATA

January 1 2009	Time: 14:54 20.8 UTC	Magnitude: 1.1 ML	MCD	SN	57.2	AML	10:55	59.33	24	0.34
Lat: 55.067N	Lon: -3.628W	Depth: 3.1 km	MVH1	SZ	62.7	EP	10:55	52.41		-0.03
Grid Ref: 296.05 kmE	575.94 kmN	RMS: 0.40 secs	MME1	SZ	87.7	EP	10:55	56.45		0.07
Locality: DUMFRIES,D & G			MDO	SZ	102.0	EP	10:55	58.59		0.07
Velocity model: Lownet	Xnear: 100.0	Xfar: 200.0								
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES										
BWH SZ 12.3 EP 14:54 23.39										
BHH SZ 26.3 EP 14:54 25.92										
BHH SE 26.3 ES 14:54 29.26										
BHH SN 26.3 AML 14:54 29.50	27	0.18								
BHH SE 26.3 AML 14:54 30.56	46	0.32								
ESK HZ 38.7 EP 14:54 27.26			-0.61							
ESK HE 38.7 ES 14:54 32.16			-0.88							
ESK HE 38.7 AML 14:54 32.69	12	0.18								
ESK HN 38.7 AML 14:54 32.77	10	0.28								
GAL1 HZ 72.9 EP 14:54 33.49			0.21							
GAL1 HN 72.9 ES 14:54 41.85			-0.53							
GAL1 HN 72.9 AML 14:54 42.26	9	0.20								
GAL1 HE 72.9 AML 14:54 46.30	4	0.22								
EBL SZ 86.8 EP 14:54 35.56			0.06							
XAL SZ 93.3 EP 14:54 36.99			0.48							
PGB1 HZ 99.0 EP 14:54 37.49			0.14							
PGB1 HE 99.0 ES 14:54 49.31			-0.12							
PGB1 HE 99.0 AML 14:54 51.78	11	0.28								
PGB1 HN 99.0 AML 14:54 52.25	11	0.46								
EDI HZ 99.3 EP 14:54 37.85			0.47							
EDI HN 99.3 ES 14:54 50.09			0.61							
EDI HN 99.3 AML 14:54 52.84	6	0.52								
EDI HE 99.3 AML 14:54 53.05	7	0.24								
ESY SZ 114.0 EP 14:54 39.97			0.22							
January 2 2009	Time: 01:43 38.0 UTC	Magnitude: 1.0 ML								
Lat: 55.078N	Lon: -3.648W	Depth: 2.7 km								
Grid Ref: 294.80 kmE	577.20 kmN	RMS: 0.30 secs								
Locality: DUMFRIES,D & G										
Velocity model: Lownet	Xnear: 100.0	Xfar: 200.0								
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES										
BWH SZ 10.9 EP 01:43 40.39			0.02							
BHH SZ 27.5 EP 01:43 42.96			-0.21							
BHH SE 27.5 ES 01:43 46.30			-0.64							
BHH SE 27.5 AML 01:43 46.90	39	0.40								
BHH SN 27.5 AML 01:43 47.69	32	0.20								
KESW HZ 64.7 EP 01:43 49.68			0.42							
KESW HE 64.7 ES 01:43 57.72			0.25							
KESW HE 64.7 AML 01:43 58.01	6	0.56								
KESW HN 64.7 AML 01:44 00.58	4	0.88								
GAL1 HZ 72.0 EP 01:43 50.43			0.07							
GAL1 HN 72.0 ES 01:43 58.77			-0.62							
GAL1 HN 72.0 AML 01:43 59.27	10	0.18								
GAL1 HE 72.0 AML 01:44 03.21	5	0.18								
EBL SZ 86.2 EP 01:43 52.55			-0.08							
EAU SZ 86.4 EP 01:43 52.82			0.19							
PGB1 HZ 97.3 EP 01:43 54.64			0.35							
PGB1 HE 97.3 ES 01:44 06.04			-0.15							
PGB1 HE 97.3 AML 01:44 08.79	10	0.26								
PGB1 HN 97.3 AML 01:44 09.49	10	0.42								
EDI HZ 98.5 EP 01:43 54.90			0.43							
EDI HN 98.5 ES 01:44 06.43			-0.06							
EDI HN 98.5 AML 01:44 09.68	5	0.26								
EDI HE 98.5 AML 01:44 09.82	10	0.50								
ESY SZ 114.0 EP 01:43 56.97			0.05							
January 3 2009	Time: 19:00 14.9 UTC	Magnitude: 1.1 ML								
Lat: 55.081N	Lon: -3.640W	Depth: 2.5 km								
Grid Ref: 295.32 kmE	577.52 kmN	RMS: 0.40 secs								
Locality: DUMFRIES,D & G										
Velocity model: Lownet	Xnear: 100.0	Xfar: 200.0								
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES										
BWH SZ 10.6 EP 19:00 17.39			0.15							
BHH SZ 27.0 EP 19:00 20.01			0.01							
BHH SE 27.0 ES 19:00 23.32			-0.39							
BHH SE 27.0 AML 19:00 24.57	51	0.34								
BHH SN 27.0 AML 19:00 24.71	35	0.20								
ESK HE 38.1 EP 19:00 21.28			-0.62							
ESK HE 38.1 ES 19:00 26.37			-0.63							
ESK HE 38.1 AML 19:00 26.77	19	0.24								
ESK HN 38.1 AML 19:00 26.79	16	0.26								
KESW HZ 64.7 EP 19:00 26.76			0.57							
KESW HE 64.7 ES 19:00 34.59			0.16							
KESW HE 64.7 AML 19:00 35.56	12	0.76								
KESW HN 64.7 AML 19:00 37.89	3	0.62								
GAL1 HZ 72.6 EP 19:00 27.40			0.01							
GAL1 HN 72.6 ES 19:00 35.85			-0.65							
GAL1 HN 72.6 AML 19:00 36.27	10	0.22								
GAL1 HE 72.6 AML 19:00 40.03	5	0.30								
EBL SZ 85.7 EP 19:00 29.50			0.02							
EAU SZ 86.0 EP 19:00 29.74			0.23							
XAL SZ 94.5 EP 19:00 30.95			0.10							
PGB1 HZ 97.3 EP 19:00 31.63			0.40							
PGB1 HE 97.3 ES 19:00 42.95			-0.19							
PGB1 HE 97.3 AML 19:00 45.93	12	0.32								
PGB1 HN 97.3 AML 19:00 46.48	10	0.44								
EDI HE 98.1 ES 19:00 43.99			0.67							
EDI HE 98.1 AML 19:00 46.83			10	0.50						
EDI HN 98.1 AML 19:00 47.14	5	0.18								
ESY SZ 113.0 EP 19:00 33.99			0.22							
January 4 2009	Time: 10:55 41.7 UTC	Magnitude: 1.3 ML								
Lat: 58.095N	Lon: -3.172W	Depth: 4.7 km								
Grid Ref: 330.92 kmE	912.34 kmN	RMS: 0.10 secs								
Locality: MORAY FIRTH										
Velocity model: Lownet	Xnear: 100.0	Xfar: 300.0								
Comment: EAST OF HELMSDALE										
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES										
MCD SZ 57.2 EP 10:55 51.50			-0.11							
MCD SN 57.2 ES 10:55 58.88			0.00							
MCD SE 57.2 AML 10:55 59.21	16	0.50								
January 5 2009	Time: 08:59 47.1 UTC	Magnitude: 1.2 ML								
Lat: 55.092N	Lon: -3.634W	Depth: 2.4 km								
Grid Ref: 295.73 kmE	578.73 kmN	RMS: 0.40 secs								
Locality: DUMFRIES,D & G										
Velocity model: Lownet	Xnear: 100.0	Xfar: 200.0								
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES										
BWH SZ 9.4 EP 08:59 49.62										
BHH SZ 26.5 EP 08:59 52.17										
BHH SE 26.5 ES 08:59 55.51										
BHH SE 26.5 AML 08:59 56.74	79	0.34								
BHH SN 26.5 EP 08:59 57.52	46	0.18								
ESK HZ 37.0 EP 08:59 53.38										
ESK HN 37.0 ES 08:59 58.14										
ESK HE 37.0 AML 08:59 58.85	26	0.16								
ESK HN 37.0 AML 08:59 58.94	21	0.26								
KESW HZ 65.5 EP 08:59 58.79										
KESW HN 65.5 ES 08:59 07.26										
KESW HE 65.5 AML 08:59 07.43	5	0.28								
KESW HE 65.5 AML 09:00 10.63	4	0.60								
KESW HE 65.5 AML 09:00 15.58										
GAL1 HZ 73.4 EP 08:59 59.58										
GAL1 HN 73.4 ES 09:00 08.01										
GAL1 HN 73.4 AML 09:00 08.46	14	0.20								
GAL1 HE 73.4 AML 09:00 12.44	7	0.44								
EBL SZ 84.4 EP 09:00 01.54										
EBL SN 96.5 EP 09:00 18.13										
EGL HN 96.5 ES 09:00 03.09										
PGB1 HN 96.5 EP 09:00 15.73										
ESY SZ 112.0 EP 09:00 06.12										
January 8 2009	Time: 01:42 02.3 UTC	Magnitude: 0.8 ML								
Lat: 53.267N	Lon: -2.138W	Depth: 11.2 km								
Grid Ref: 390.80 kmE	374.48 kmN	RMS: 0.30 secs								
Locality: MACCLESFIELD,CHESHIRE										
Velocity model: Lownet	Xnear: 100.0	Xfar: 200.0								
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES										
STNC HZ 20.1 EP 01:42 06.68										
STNC HN 20.1 ES 01:42 09.52										
STNC HE 20.1 AML 01:42 10.16	10	0.20								
STNC SN 20.1 EP 01:42 10.21	17	0.37								

TABLE 2 : PHASE DATA

LRW	HN	15.5	AML	05:32	39.18	2826	0.08	HLM1	HZ	19.0	IP	D	10:36	04.31	-0.01												
LRW	HE	15.5	AML	05:32	39.52	2239	0.10	HLM1	HE	19.0	ES		10:36	07.48	0.01												
RSC	SZ	307.0	EP	05:33	10.86		0.09	HLM1	HE	19.0	AML		10:36	07.88	31 0.12												
MVH1	SZ	309.0	EP	9	05:33	20.54	9.56	HLM1	HN	19.0	AML		10:36	07.89	47 0.15												
MCD	SZ	320.0	EP	9	05:33	22.64	10.34	MCH1	HZ	54.6	EP		10:36	09.43	0.01												
MCD	SN	320.0	ES	9	05:33	54.07	0.31	MCH1	HE	54.6	ES		10:36	16.22	-0.01												
MCD	SE	320.0	AML	05:34	12.56	71	0.34	MCH1	HN	54.6	AML		10:36	16.59	9 0.10												
MCD	SN	320.0	AML	05:34	18.30	113	0.78	MCH1	HE	54.6	AML		10:36	16.66	12 0.08												
MME1	SZ	343.0	EP	9	05:33	25.76	10.57	WLF1	HN	152.0	ES		10:36	40.84	0.00												
MDO	SZ	361.0	EP	9	05:33	27.53	10.04	WLF1	HE	152.0	AML		10:36	41.35	5 0.45												
RRR	SZ	373.0	EP		05:33	19.11	0.19	WLF1	HN	152.0	AML		10:36	41.42	2 0.32												
RRR	SN	373.0	ES		05:33	55.09	0.22	February 22 2009 Time: 13:18 53.4 UTC Magnitude: 1.8 ML																			
RRR	SN	373.0	AML	05:34	16.81	78	0.48	Lat: 56.449N Lon: -5.293W Depth: 5.2 km Grid Ref: 197.07 kmE 733.39 kmN RMS: 0.20 secs																			
RRR	SE	373.0	AML	05:34	20.49	93	0.40	Locality: BONAWE,ARGYLL/BUTE Velocity model: Lownet Xnear: 100.0 Xfar: 200.0 Comment: 4KM WEST OF BONAWE																			
FOO	HZ	374.0	EP		05:33	18.76	-0.21	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES										
FOO	HN	374.0	AML	05:34	06.76	117	0.34	EAB	SZ	65.9	EP		13:19	04.54	-0.17												
FOO	HE	374.0	AML	05:34	09.11	67	0.42	PGB1	HZ	87.0	EP		13:19	08.15	0.18												
KAC	SZ	385.0	EP		05:33	20.33	-0.13	PGB1	HE	87.0	ES		13:19	18.31	-0.27												
RRH	SZ	405.0	EP	05:33	22.62		-0.28	PGB1	HN	87.0	AML		13:19	19.34	21 0.38												
KPL	HZ	412.0	EP	05:33	23.70		-0.07	ELO	SZ	97.6	EP		13:19	09.61	-0.06												
KPL	HE	412.0	ES	05:34	02.14		-1.12	KPL	HZ	102.0	EP		13:19	10.08	-0.10												
KPL	HN	412.0	AML	05:34	29.62	59	0.41	KPL	HE	102.0	ES		13:19	22.46	0.05												
KPL	HE	412.0	AML	05:34	29.84	78	0.45	KPL	HN	102.0	AML		13:19	25.29	30 0.18												
EAB	SZ	488.0	EP	05:33	33.70		0.47	KPL	HE	102.0	AML		13:19	25.82	36 0.18												
ESY	SZ	491.0	EP	05:33	34.59		1.06	KAC	SZ	117.0	EP		13:19	12.58	-0.03												
EDI	HZ	496.0	EP	05:33	32.49		-1.75	MDO	SZ	124.0	EP		13:19	13.73	-0.03												
EDI	HE	496.0	AML	05:34	23.05	11	0.16	EAU	SZ	133.0	EP		13:19	15.39	0.33												
EDI	HN	496.0	AML	05:34	48.48	24	0.49	EDI	HZ	143.0	EP		13:19	17.05	0.57												
EBL	SZ	511.0	EP	05:33	37.40		1.31	EDI	HN	143.0	ES		13:19	33.53	0.22												
PGB1	HZ	531.0	EP	05:33	39.65		1.14	EDI	HE	143.0	AML		13:19	36.86	14 0.66												
PGB1	HE	531.0	ES	05:34	29.34		0.58	EDI	HN	143.0	AML		13:19	37.56	20 0.54												
PGB1	HE	531.0	AML	05:35	03.05	37	0.60	EBL	SZ	159.0	EP		13:19	18.94	0.16												
PGB1	HN	531.0	AML	05:35	07.87	36	0.60	MCD	SE	177.0	EP		13:19	21.32	0.12												
ESK	HZ	563.0	EP	05:33	43.16		0.66	MCD	SE	177.0	AML		13:19	45.08	30 0.28												
ESK	HE	563.0	AML	05:34	40.73	13	0.29	ESK	HN	182.0	ES		13:19	21.46	0.29												
ESK	HN	563.0	AML	05:34	52.96	15	0.44	ESK	HN	182.0	AML		13:19	40.78	-0.68												
January 20 2009 Time: 06:51 05.9 UTC Magnitude: 2.1 ML Lat: 49.197N Lon: -3.227W Depth: 13.1 km Grid Ref: 310.62 kmE -77.38 kmN RMS: 0.20 secs Locality: ENGLISH CHANNEL Velocity model: Lownet Xnear: 100.0 Xfar: 200.0 Comment: 80KM WEST OF JERSEY																											
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES	February 23 2009 Time: 00:58 04.6 UTC Magnitude: 1.6 ML Lat: 50.601N Lon: 1.012W Depth: 5.0 km Grid Ref: 613.12 kmE 82.32 kmN RMS: 0.60 secs Locality: ENGLISH CHANNEL Velocity model: Lownet Xnear: 100.0 Xfar: 500.0 Comment: 55KM S OF FOLKESTONE																	
JSA	HZ	76.9	EP	05:51	18.65		-0.05	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES										
JSA	HE	76.9	ES	05:51	27.64		-0.41	ELSH	HZ	61.5	EP		00:58	15.91	0.71												
JSA	HE	76.9	AML	06:51	28.35	52	0.10	ELSH	HN	61.5	ES		00:58	22.48	-0.45												
JSA	HN	76.9	AML	06:51	28.41	77	0.18	ELSH	HN	61.5	AML		00:58	27.15	18 0.63												
JLP	SZ	82.0	EP	05:51	19.60		0.10	ELSH	HE	61.5	AML		00:58	29.26	18 0.66												
JRS	SZ	82.7	EP	05:51	19.61		0.02	JQE	SZ	269.0	EP		00:58	43.65	-0.20												
JRS	SE	82.7	ES	05:51	29.67		0.07	JLP	SZ	270.0	EP		00:58	43.58	-0.37												
JRS	SE	82.7	AML	06:51	29.99	77	0.20	JRS	SZ	273.0	EP		00:58	44.07	-0.24												
JDG	EN	86.0	ES	05:51	30.50		0.03	JRS	SE	273.0	AML		00:59	25.05	5 0.67												
JDC	FZ	86.0	EP	05:51	20.18		0.08	JSA	HZ	278.0	EP		00:58	44.06	-0.87												
JDC	EE	86.0	ES	05:51	30.68		0.20	JSA	HN	278.0	ES		00:59	15.25	0.90												
JDG	EZ	86.0	EP	05:51	20.11		0.02	JSA	HN	278.0	AML		00:59	30.67	5 0.54												
DYA	HZ	147.0	EP	05:51	28.46		-0.45	JSA	HE	278.0	AML		00:59	31.20	5 0.46												
DYA	HE	147.0	ES	05:51	45.95		0.23	February 25 2009 Time: 19:54 60.0 UTC Magnitude: 1.4 ML Lat: 53.074N Lon: -4.071W Depth: 5.8 km Grid Ref: 261.27 kmE 355.01 kmN RMS: 0.30 secs Locality: LLANBERIS, Gwynedd Velocity model: Lleyn Xnear: 80.0 Xfar: 200.0 Comment: FELT LLANBERIS Intensity: 3																			
DYA	HE	147.0	AML	05:51	48.29	48	0.28	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES										
DYA	HN	147.0	AML	06:51	48.55	33	0.46	YLL	SZ	9.9	EP		19:55	02.43	0.18												
February 1 2009 Time: 08:45 43.9 UTC Magnitude: 1.2 ML Lat: 55.079N Lon: -3.636W Depth: 2.7 km Grid Ref: 295.57 kmE 577.29 kmN RMS: 0.80 secs Locality: DUMFRIES, D & G Velocity model: Lownet Xnear: 100.0 Xfar: 200.0 Comment: 500KM NNE OF LERWICK	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES																	
BWH	SZ	10.9	EP		08:45	46.35		0.05	WPM1	SZ	23.3	EP		19:55	04.55	0.33											
BHH	SZ	26.7	EP		08:45	48.82		-0.16	WLF1	HZ	32.4	EP		19:55	05.61	-0.02											
BHH	SE	26.7	ES		08:45	52.14		-0.52	WLF1	HE	32.4	ES		19:55	09.32	-0.16											
BHH	SE	26.7	AML	08:45	53.43	90	0.32	WLF1	HE	32.4	AML		19:55	09.73	37 0.10												
BHH	SN	26.7	AML	08:45	54.19	59	0.18	WLF1	HN	32.4	AML		19:55	10.13	24 0.20												
ESK	HZ	38.1	EP		08:45	50.09		-0.83	YRC	SZ	39.0	EP		19:55	06.54	-0.17											
ESK	HE	38.1	AML	08:45	54.88		-1.13	WME	SZ	39.1	EP		19:55	06.74	0.01												
ESK	HN	38.1	AML	08:45	55.62	25	0.28	FOEL	HZ	62.0	EP		19:55	10.47	-0.03												
BBO1	SZ	45.6	EP	08:45	52.57		0.40	FOEL	HE	62.0	ES		19:55	17.37	-0.29												
BBO1	SE	45.6	ES	08:45	58.70		0.53	FOEL	HN	62.0	AML		19:55	18.37	30 0.52												
BBO1	SE	45.6	AML	08:45	58.89	11	0.54	FOEL	HE	62.0	AML		19:55	18.97	12 0.34												
BBO1	SN	45.6	AML	08:45	59.55	9	0.15	MCH1	HN	140.0	ES		19:55	22.91	0.21												
KESW	HZ	64.4	EP	08:45	55.41		0.26	MCH1	HE	140.0	ES		19:55	38.78	0.63												
KESW	HN	64.4	ES	08:45	03.15		-0.18	MCH1	HN	140.0	AML		19:55	41.07	14 0.42												
KESW	HE	64.4	AML	08:46	03.85	5	0.44	MCH1	HE	140.0	AML		19:55	41.38	10 0.32</												

TABLE 2 : PHASE DATA

LRW	HZ	518.0	EP	10:12	59.37	-0.28	BHH	SE	153.0	ES	02:46	51.32	0.30
LRW	HE	518.0	ES	10:13	50.00	0.09	BHH	SN	153.0	AML	02:46	52.80	8 0.16
LRW	HN	518.0	AML	10:13	53.27	22 0.52	BHH	SE	153.0	AML	02:46	52.84	12 0.18
LRW	HE	518.0	AML	10:13	54.36	21 0.56	KPL	HZ	160.0	EP	02:46	34.98	0.60
							KPL	HE	160.0	ES	02:46	52.60	-0.22
March 3 2009				Time: 14:35	55.9 UTC	Magnitude: 3.0 ML	KPL	HE	160.0	AML	02:46	59.55	5 0.84
Lat: 51.116N				Lon: 1.178W		Depth: 3.6 km	KPL	HN	160.0	AML	02:47	03.33	3 0.80
Grid Ref: 622.40 kmE						RMS: 0.50 secs							
Locality: FOLKESTONE, KENT													
Velocity model: Folkestone	Xnear:	200.0	Xfar:	400.0									
Comment: FELT FOLKESTONE...						Intensity: 4							
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES				
ELSH	HZ	4.7	EP		14:35	56.86							
ELSH	HN	4.7	ES		14:35	58.11							
ELSH	HE	4.7	AML		14:35	58.57	6841	0.11					
ELSH	HN	4.7	AML		14:35	58.77	12526	0.12					
SKP	EZ	154.0	EP		14:36	21.85							
AEU	SZ	167.0	EP		14:36	24.01							
AEU	SN	167.0	ES		14:36	43.87							
WOL	BZ	169.0	EP		14:36	23.83							
WOL	BN	169.0	ES		14:36	45.00							
WOL	BN	169.0	AML		14:36	51.48	138	0.58					
WOL	BE	169.0	AML		14:36	52.14	118	0.43					
AW11	SZ	192.0	EP		14:36	27.31							
SWN1	HZ	212.0	EP		14:36	29.51							
SWN1	HE	212.0	AML		14:37	00.80	173	0.56					
SWN1	HN	212.0	AML		14:37	02.75	186	0.54					
SSW	EZ	230.0	EP		14:36	31.75							
CWF	HZ	249.0	EP		14:36	33.57							
CWF	HN	249.0	AML		14:37	06.56	65	0.25					
CWF	HE	249.0	AML		14:37	07.90	43	0.27					
KBII	SZ	301.0	EP		14:36	39.67							
MCH1	HZ	306.0	EP		14:36	40.30							
MCH1	HN	306.0	AML		14:37	25.27	28	0.24					
MCH1	HE	306.0	AML		14:37	26.43	41	0.35					
STNC	HZ	319.0	AML		14:37	40.06	164	0.52					
STNC	HE	319.0	AML		14:37	46.82	60	0.70					
JSA	HZ	321.0	EP		14:36	41.64							
JSA	HE	321.0	AML		14:37	33.83	86	0.46					
JSA	HN	321.0	AML		14:37	35.11	45	0.32					
HGN	BZ	336.0	EP		14:36	43.88							
FOEL	HZ	360.0	EP		14:36	47.09							
FOEL	HN	360.0	AML		14:37	41.02	23	0.78					
FOEL	HE	360.0	AML		14:37	41.28	48	0.52					
HPK	HZ	369.0	EP		14:36	47.54							
HPK	HE	369.0	AML		14:37	49.09	100	0.55					
HPK	HN	369.0	AML		14:37	51.11	157	0.53					
HTL	HZ	397.0	AML		14:38	02.48	27	0.48					
HTL	HN	397.0	AML		14:38	06.11	30	0.76					
WPM1	SZ	421.0	EP		14:36	54.11							
YRE	SZ	437.0	EP		14:36	56.40							
WME	SZ	452.0	EP		14:36	57.71							
YRC	SZ	460.0	EP		14:36	58.68							
XAL	SZ	475.0	EP		14:37	00.56							
KESW	HZ	482.0	EP		14:37	01.57							
KESW	HE	482.0	AML		14:38	23.97	33	0.66					
KESW	HN	482.0	AML		14:38	24.18	28	0.58					
ESK	HZ	551.0	EP		14:37	09.93							
ESK	HN	551.0	AML		14:38	07.44	8	0.42					
ESK	HE	551.0	AML		14:38	39.76	10	0.40					
March 4 2009				Time: 12:04	27.1 UTC	Magnitude: 1.6 ML							
Lat: 51.528N				Lon: -3.054W		Depth: 12.6 km							
Grid Ref: 326.89 kmE				181.59 kmN		RMS: 0.10 secs							
Locality: NEWPORT, SOUTH WALES													
Velocity model: Mid Wales	Xnear:	80.0	Xfar:	200.0									
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES				
MCH1	HZ	52.3	IP		12:04	36.40							
MCH1	HE	52.3	ES		12:04	42.75							
MCH1	HN	52.3	AML		12:04	42.89	77	0.10					
MCH1	HE	52.3	AML		12:04	42.90	18	0.24					
SWN1	HN	87.0	ES		12:04	52.10							
SWN1	HE	87.0	AML		12:04	57.04	36	0.36					
SWN1	HN	87.0	AML		12:04	57.25	87	0.20					
HTL	HZ	116.0	EP		12:04	45.94							
HTL	HN	116.0	AML		12:05	00.78	12	0.64					
HTL	HE	116.0	AML		12:05	02.63	9	0.84					
DYA	HE	136.0	ES		12:05	04.91							
FOEL	HE	152.0	ES		12:05	09.00							
FOEL	HE	152.0	AML		12:05	09.86	7	0.46					
FOEL	HN	152.0	AML		12:05	11.04	11	0.44					
March 16 2009				Time: 02:46	09.1 UTC	Magnitude: 1.2 ML							
Lat: 55.929N				Lon: -5.132W		Depth: 7.2 km							
Grid Ref: 204.36 kmE				675.09 kmN		RMS: 0.30 secs							
Locality: DUNOON, ARGYLL/BUTE													
Velocity model: Lownet	Xnear:	100.0	Xfar:	200.0									
Comment: 13KM WSW OF DUNOON													
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES				
PGB1	HZ	42.6	EP		02:46	16.29							
PGB1	HE	42.6	AML		02:46	16.44	9	0.10					
PGB1	HN	42.6	ES		02:46	22.33							
PGB1	HN	42.6	AML		02:46	28.56	6	0.58					
EAB	SZ	57.3	EP		02:46	18.84							
EAB	SZ	106.0	EP		02:46	26.61							
GAL1	HZ	121.0	EP		02:46	22.81							
GAL1	HN	121.0	ES		02:46	35.96							
GAL1	HE	121.0	AML		02:46	39.06	9	0.26					
GAL1	HN	121.0	AML		02:46	39.51	8	0.62					
BWH	SZ	125.0	EP		02:46	29.54							
EBL	SZ	132.0	EP		02:46	30.58							
ESK	HZ	139.0	EP		02:46	31.31							
ESK	HN	139.0	ES		02:46	47.17							
ESK	HN	139.0	AML		02:46	50.08	6	0.34					
ESK	HE	139.0	AML		02:46	50.64	5	0.32					
ECK	SZ	151.0	EP		02:46	33.13							
BHH	SZ	153.0	EP		02:46	33.85							
March 24 2009				Time: 07:52	34.7 UTC	Magnitude: 1.9 ML							
Lat: 56.478N				Lon: -5.254W		Depth: 7.5 km							
Grid Ref: 199.63 kmE				736.50 kmN		RMS: 0.50 secs							
Locality: BONAWE, ARGYLL/BUTE													
Velocity model: Lownet CONN	Xnear:	100.0	Xfar:	200.0									
Comment: FELT NORTH CONN						Intensity: 3							
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES				
EAB	SZ	65.2	IP		C	07:52	45.47						
PGB1	HZ	88.3	EP			07:52	49.31						
PGB1	SZ	88.3	AML			07:53	00.44	26	0.34				
PGB1	HN	88.3	ES			07:53	02.37	37	0.50				
KPL	HZ	98.9	EP			07:52	50.93						
KPL	HN	98.9	AML			07:53	02.19						
KPL	HE	98.9	ES			07:53	01.19	37	0.16				
KPL	HE	98.9	AML			07:53	06.75	45	0.16				
KAC	SZ	114.0	EP			07:52							

TABLE 2 : PHASE DATA

ESK	HZ	159.0	EP	22:53	16.55	0.74	GAL1	HZ	90.8	EP	02:40	10.01	0.13		
ESK	HN	159.0	ES	22:53	34.24	0.22	GAL1	HN	90.8	ES	02:40	20.67	-0.37		
ESK	HN	159.0	AML	22:53	37.87	10 0.62	GAL1	HN	90.8	AML	02:40	22.54	2 0.13		
ESK	HE	159.0	AML	22:53	38.24	8 0.34	GAL1	HE	90.8	AML	02:40	22.76	2 0.30		
ECK	SZ	169.0	EP	22:53	16.87	-0.34	ESK	HZ	100.0	EP	02:40	11.99	0.66		
KPL	HZ	170.0	EP	22:53	16.66	-0.62	ESK	HE	100.0	ES	02:40	23.51	-0.04		
KPL	HE	170.0	ES	22:53	36.58	0.02	ESK	HN	100.0	AML	02:40	25.12	4 0.12		
KPL	HN	170.0	AML	22:53	39.50	4 0.22	ESK	HE	100.0	AML	02:40	25.17	5 0.30		
KPL	HE	170.0	AML	22:53	39.99	9 0.60									
KAC	SZ	189.0	EP	22:53	19.45	-0.17									
April 11 2009 Time: 11:39 07.2 UTC Magnitude: 3.0 ML															
Lat:	53.697N	Lon:	-0.249W		Depth:	15.3 km		Lat:	55.822N	Lon:	-3.195W		Depth:	4.5 km	
Grid Ref:	515.59 KmE	423.73 KmN			RMS:	0.60 secs		Grid Ref:	325.14 KmE	659.39 KmN			RMS:	0.50 secs	
Locality:	GOXHILL,NORTH LINCS				Locality:	PENICUIK,MIDLOTHIAN									
Velocity model:	Lownet	Xnear:	200.0	Xfar:	500.0		Velocity model:	Lownet	Xnear:	100.0	Xfar:	200.0			
Comment:	FELT HULL,SWANLAND...			Intensity:	3		STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL PERI RES	
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	EDB	SZ	10.9	EP	14:12	09.58		0.29	
KBII	SZ	98.1	IP	C	11:39	23.53	EDI	HZ	11.3	IP	C	14:12	08.40	-0.89	
KBII	SZ	98.1	ES		11:39	35.15	EDI	HE	11.3	ES		14:12	10.40	-0.66	
LHO	EZ	108.0	IP	C	11:39	24.87	EAU	SZ	16.0	IP	C	14:12	10.35	0.22	
ABA1	SZ	129.0	EP		11:39	28.07	ESY	SZ	37.8	IP	C	14:12	14.01	0.20	
AWIL	SZ	149.0	EP		11:39	30.97	ESK	HZ	56.3	IP	C	14:12	16.59	-0.09	
AEU	SZ	156.0	EP		11:39	31.35	ESK	HN	56.3	ES		14:12	22.99	-0.87	
AEU	SN	156.0	ES		11:39	48.45	ESK	HE	56.3	AML		14:12	23.12	98 0.22	
AEU	SE	156.0	AML		11:39	51.27	ESK	HN	56.3	AML		14:12	24.52	74 0.32	
AEU	SN	156.0	AML		11:39	52.01	ECK	SZ	71.5	IP	C	14:12	19.32	0.26	
XAL	SZ	182.0	EP		11:39	34.96	ELO	SZ	79.0	EP		14:12	20.49	0.24	
KESW	HZ	211.0	EP		11:39	38.90	PGB1	HZ	80.8	EP		14:12	20.92	0.45	
KESW	HE	211.0	AML		11:40	10.14	PGB1	HN	80.8	ES		14:12	30.15	-0.26	
KESW	HN	211.0	AML		11:40	12.49	PGB1	HE	80.8	AML		14:12	30.74	46 0.22	
FOEL	HZ	216.0	EP		11:39	38.33	PGB1	HN	80.8	AML		14:12	33.81	41 0.18	
FOEL	HZ	216.0	ES		11:40	03.12	EAB	SZ	82.1	EP		14:12	21.16	0.47	
FOEL	HN	216.0	AML		11:40	12.20	DRUM	HZ	129.0	EP		14:12	28.57	0.62	
FOEL	HE	216.0	AML		11:40	13.62	DRUM	HN	129.0	ES		14:12	43.79	0.43	
HLM1	HZ	220.0	EP		11:39	38.91	KESW	HZ	137.0	EP		14:12	29.33	0.16	
HLM1	HE	220.0	AML		11:40	07.67	KESW	HN	137.0	ES		14:12	45.81	0.36	
HLM1	HN	220.0	AML		11:40	08.31	GAL1	HZ	143.0	EP		14:12	48.48	39 0.46	
SSW	EZ	221.0	EP		11:39	39.34	GAL1	HN	143.0	AML		14:12	49.55	56 0.48	
SKP	EZ	223.0	EP		11:39	39.66	EAL	HN	143.0	ES				0.11	
ECK	SZ	249.0	EP		11:39	43.30	GAL1	HE	143.0	AML		14:12	46.51	-0.37	
ESK	HZ	263.0	EP		11:39	44.69	GAL1	HN	143.0	AML		14:12	48.71	54 0.24	
ESK	HN	263.0	AML		11:40	25.54	ESK	HN	143.0	AML		14:12	48.76	62 0.20	
ESK	HE	263.0	AML		11:40	26.17									
ESK	HN	263.0			16:04	21.00	121	0.00							
ESK	HE	263.0			16:04	21.00	122	0.00							
MCH1	HZ	265.0	EP	9	11:39	44.39									
MCH1	HN	265.0	ES	9	11:40	11.26									
MCH1	HE	265.0	AML		11:40	24.47	April 28 2009 Time: 10:22 09.4 UTC Magnitude: 3.7 ML								
MCH1	HN	265.0	AML		11:40	19.52	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL PERI RES	
SWN1	HZ	265.0	EP		11:39	44.62	KESW	HZ	48.7	IP	D	10:22	18.02	-0.03	
SWN1	HN	265.0	ES		11:40	12.58	KESW	HN	48.7	AML		10:22	18.42	2707 0.50	
SWN1	HN	265.0	AML		11:40	27.22	KESW	HE	48.7	ES		10:22	24.14	-0.06	
SWN1	HE	265.0	AML		11:40	26.27	EAB	SZ	93.3	IP	D	10:22	24.65	-0.66	
WOL	BE	273.0	ES		11:40	14.77	GCD	SZ	99.8	EP		10:22	27.01	0.69	
WOL	BE	273.0	AML		11:40	28.41	BHH	SZ	105.0	EP		10:22	27.66	0.44	
WOL	BN	273.0	AML		11:40	28.69	BHH	SN	105.0	ES		10:22	38.92	-0.95	
WLF1	HZ	279.0	EP		11:39	45.45	BHH	SN	105.0	AML		10:22	44.55	3372 0.30	
WLF1	HN	279.0	AML		11:40	28.38	BHH	SE	105.0	AML		10:22	45.81	4638 0.38	
WLF1	HE	279.0	AML		11:40	28.39	ECK	SZ	114.0	EP		10:22	28.62	-0.06	
YRE	SZ	289.0	EP		11:39	46.93	WPM1	SZ	117.0	EP		10:22	28.66	-0.37	
ESY	SZ	290.0	EP		11:39	48.38	BWH	SZ	121.0	EP		10:22	30.12	0.42	
YRC	SZ	291.0	EP		11:39	47.21	WME	SN	121.0	EP		10:22	28.97	-0.65	
EBL	SZ	293.0	EP		11:39	48.75	STNC	HZ	129.0	EP		10:22	30.68	-0.05	
ELSH	HZ	299.0	EP		11:39	48.75	STNC	HE	129.0	ES		10:22	46.18	0.30	
ELSH	HN	299.0	AML		11:40	39.30	ECK	SZ	114.0	EP		10:22	28.62	-0.06	
ELSH	HE	299.0	AML		11:40	39.92	WPM1	SZ	117.0	EP		10:22	28.66	-0.37	
EDI	HZ	312.0	EP		11:39	49.92	BWH	SZ	121.0	EP		10:22	30.12	0.42	
EAU	SZ	315.0	EP		11:39	51.79	WME	SN	121.0	EP		10:22	28.97	-0.65	
GAL1	HZ	318.0	EP		11:39	51.21	STNC	HZ	129.0	EP		10:22	30.68	-0.05	
GAL1	HN	318.0	AML		11:40	39.45	STNC	HE	129.0	ES		10:22	46.18	0.30	
GAL1	HE	318.0	AML		11:40	40.93	EAL	SN	129.0	AML		10:22	48.29	1573 0.28	
EAL	SZ	380.0	EP		11:39	59.48	STNC	HN	129.0	AML		10:22	49.45	1871 0.28	
EAB	SZ	381.0	EP		11:39	59.59	EAL	HN	130.0	ES		10:22	45.59	-0.39	
HTL	HZ	417.0	EP		11:40	02.75	EAL	HN	130.0	EP		10:22	30.84	-0.40	
DYA	HZ	442.0	EP		11:40	05.72	WLF1	HZ	134.0	ES				0.53	
April 11 2009 Time: 23:33 27.0 UTC Magnitude: 1.4 ML							WLF1	HZ	134.0	EP					
Lat:	50.194N	Lon:	-5.151W		Depth:	3.2 km	KESW	HZ	134.0	AML		10:22	48.70	1186 0.30	
Grid Ref:	175.13 KmE	37.49 KmN		RMS:	0.20 secs	WLF1	HN	134.0	AML		10:22	48.71	934 0.36		
Locality:	STITHIANS,CORNWALL					GAL1	SZ	137.0	EP		10:22	31.99	0.39		
Velocity model:	Cornwall	Xnear:	150.0	Xfar:	250.0	GAL1	HN	137.0	ES		10:22	46.69	-0.67		
Comment:	FELT CROWLAS & RINSEY	Intensity:	3			GAL1	SE	137.0	AML		10:22	49.85	1197 0.34		
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	YLL	SZ	137.0	EP		10:22	31.00	-0.70	
DYA	HZ	91.0	EP		23:33	42.28	GAL1	SN	137.0	AML		10:22	49.83	1563 0.48	
DYA	HN	91.0	ES		23:33	54.62	GAL1	SZ	137.0	AML		10:22	50.73		
HTL	HZ	101.0	EP		23:33	43.97	KBI1	SZ	139.0	EP		10:22	31.68	-0.30	
HTL	HN	101.0	ES		23:33	56.90	YRC	SZ	145.0	EP		10:22	32.63	-0.03	
HTL	HN	101.0	AML		23:33	58.00	YRE	SZ	162.0	EP		10:22	34.66	-0.08	
HTL	HE	101.0	AML		23:33	58.21	EBL	SZ	180.0	EP		10:22	37.10	0.01	
HEX	SZ	136.0	EP		23:33	49.45	HLM1	HZ	182.0	EP		10:22	37.33	-0.07	
MCH1	HZ	251.0	EP		23:34	03.48	EAL	SZ	190.0	IP	D	10:22	38.81	0.44	
MCH1	HN	251.0	AML		23:34	40.34	GMM	SZ	193.0	IP	C	10:22	38.89	0.20	
MCH1	HE	251.0	AML		23:34	40.41	EDI	HZ	197.0	EP	9	10:22	37.79	-1.38	
April 20 2009 Time: 02:39 54.6 UTC Magnitude: 0.7 ML							EDI	HE	197.0						

TABLE 2 : PHASE DATA

DRUM	HZ	309.0	EP	10:22	53.06	-0.06	EDI	HE	164.0	AML	11:09	10.71	15	0.40													
HEX	SZ	348.0	EP	10:22	58.95	0.88	GAL1	HE	181.0	AML	11:09	17.60	6	0.16													
MME1	SZ	352.0	EP	10:22	58.22	-0.35	GAL1	HN	181.0	AML	11:09	18.41	5	0.42													
KSB	SZ	373.0	EP	10:23	01.32	0.14	ESK	HN	197.0	AML	11:09	19.84	13	0.32													
MDO	SZ	376.0	EP	10:23	01.64	0.09	ESK	HE	197.0	AML	11:09	19.86	11	0.72													
MCD	SZ	382.0	EP	10:23	02.02	-0.28	DRUM	HZ	205.0	EP	11:08	55.23		0.28													
MCD	SN	382.0	AML	10:24	08.19	142 0.36	DRUM	HE	205.0	AML	11:09	24.03	18	0.36													
KPL	HZ	392.0	EP	10:23	03.89	0.41	DRUM	HE	205.0	AML	11:09	24.32	13	0.21													
KAC	SZ	399.0	EP	10:23	04.79	0.34																					
MVH1	SZ	426.0	EP	10:23	07.59	-0.22																					
May 1 2009 Time: 02:33 21.0 UTC Magnitude: 0.6 ML																											
Lat: 55.105N	Lon: -3.628W						Lat: 56.172N	Lon: -4.764W				Depth: 11.6 km															
Grid Ref: 296.15 kM	580.17 kmN						Grid Ref: 228.42 kM	701.14 kmN				RMS: 0.60 secs															
Locality: DUMFRIES,D & G							Locality: LOCH LONG,ARGYLL/BUTE																				
Velocity model: Borders Xnear: 50.0 Xfar: 100.0							Velocity model: Lownet Xnear: 150.0 Xfar: 300.0																				
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES							STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES																				
BWH SZ 8.1 IP 02:33 23.62 0.33							EAB SZ 26.6 EP 04:25 38.10 -0.06																				
BWH SZ 8.1 ES 02:33 24.84 -0.10							PGB1 HZ 43.8 EP 04:25 40.51 -0.14																				
BHH SZ 26.2 EP 02:33 26.21 0.24							PGB1 HN 43.8 ES 04:25 46.04 -0.35																				
BHH SE 26.2 ES 02:33 29.50 -0.02							PGB1 HE 43.8 AML 04:25 46.56 22 0.14																				
BHH SE 26.2 AML 02:33 29.90 17 0.10							PGB1 HE 43.8 AML 04:25 46.91 26 0.36																				
BHH SN 26.2 AML 02:33 30.94 10 0.14							EAU SZ 89.8 EP 04:25 47.78 0.30																				
ECK SZ 32.9 EP 02:33 27.28 0.21	C						EDI HZ 102.0 EP 04:25 48.01 -1.17																				
ECK SZ 32.9 ES 02:33 31.03 -0.38							EDI HN 102.0 AML 04:26 02.92 18 0.22																				
ESK HZ 35.8 IP 02:33 27.56 0.04							EDI HE 102.0 AML 04:26 03.69 10 0.47																				
ESK HE 35.8 ES 02:33 31.98 -0.19							EBL SZ 116.0 EP 04:25 51.88 0.62																				
ESK HE 35.8 AML 02:33 32.93 6 0.16							ESK HZ 137.0 EP 04:25 54.55 0.35																				
ESK HN 35.8 AML 02:33 33.00 5 0.28							ESK HN 137.0 ES 04:26 10.11 0.38																				
KESW HZ 66.5 EP 02:33 32.85 0.36							ESK HE 137.0 AML 04:26 14.00 7 0.38																				
KESW HE 66.5 ES 02:33 40.44 -0.23							KPL HZ 141.0 EP 04:25 55.28 0.59																				
KESW HE 66.5 AML 02:33 40.95 4 0.70							KPL HE 141.0 ES 04:26 09.70 -0.99																				
KESW HE 66.5 AML 02:33 41.90 4 0.82							KPL HN 141.0 AML 04:26 14.01 8 0.33																				
GALL HZ 74.3 EP 02:33 33.70 -0.02							KPL HE 141.0 AML 04:26 14.06 11 0.33																				
GALL HN 74.3 ES 02:33 42.06 -0.71							MDO SZ 143.0 EP 04:25 55.85 0.71																				
GALL HN 74.3 AML 02:33 42.50 4 0.20							GAL1 SE 145.0 ES 04:26 11.65 -0.21																				
GALL HE 74.3 AML 02:33 43.71 4 0.78							GAL1 SE 145.0 AML 04:26 12.62 10 0.14																				
May 1 2009 Time: 18:21 37.4 UTC Magnitude: 1.5 ML																											
Lat: 56.178N	Lon: -4.062W						GAL1 SN 145.0 AML 04:26 14.14 7 0.24																				
Grid Ref: 272.01 kM	700.28 kmN						ECK SZ 151.0 EP 04:25 56.32 0.13																				
Locality: DOUNE,STIRLING							KAC SZ 151.0 EP 04:25 56.03 -0.18																				
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0							DRUM HZ 163.0 EP 04:25 58.13 0.51																				
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES							DRUM HN 163.0 AML 04:26 21.18 11 0.14																				
EAB SZ 17.1 IP C 18:21 40.59 -0.34							DRUM HE 163.0 AML 04:26 21.97 8 0.10																				
ELO SZ 39.2 EP 18:21 44.50 0.05							MCD SZ 182.0 EP 04:25 59.88 -0.20																				
PGB1 HZ 48.5 EP 18:21 45.83 0.00							MCD SE 182.0 AML 04:26 26.78 8 0.26																				
PGB1 HE 48.5 ES 18:21 51.72 -0.27							MCD SN 182.0 AML 04:26 26.81 6 0.20																				
PGB1 HN 48.5 AML 18:21 51.98 71 0.22							June 5 2009 Time: 19:42 07.1 UTC Magnitude: 2.9 ML																				
PGB1 HE 48.5 AML 18:21 52.03 68 0.16							Lat: 51.623N	Lon: -3.645W				Depth: 3.6 km															
EAU SZ 53.3 EP 18:21 47.31 0.70							Grid Ref: 286.14 kM	192.91 kmN				RMS: 0.50 secs															
EDI HZ 61.4 EP 18:21 47.59 -0.23							Locality: MAESTEG, BRIDGEND																				
EDI HE 61.4 ES 18:21 54.56 -0.87							Velocity model: Mid Wales Xnear: 150.0 Xfar: 450.0																				
EDI HN 61.4 AML 18:21 54.94 30 0.46							Comment: FELT BRIDGEND... Intensity: 3																				
EDI HE 61.4 AML 18:21 55.61 17 0.33							STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES																				
ESK HZ 110.0 EP 18:21 56.15 0.78							MCH1 HZ 61.0 EP 19:42 17.54 0.04																				
ESK HE 110.0 ES 18:22 08.73 0.24							MCH1 HN 61.0 ES 19:42 24.78 -0.24																				
ESK HE 110.0 AML 18:22 11.50 10 0.20							MCH1 HE 61.0 AML 19:42 25.36 523 0.21																				
ESK HN 110.0 AML 18:22 11.69 13 0.24							MCH1 HN 61.0 AML 19:42 25.36 841 0.17																				
GALL HE 152.0 AML 18:22 19.71 8 0.50							HEX SZ 62.9 IP D 19:42 18.14 0.33																				
GALL HN 152.0 AML 18:22 20.60 6 0.16							HTL HZ 91.2 IP C 19:42 23.26 0.77																				
KPL HZ 162.0 EP 18:22 03.52 0.61							HTL HE 91.2 ES 19:42 32.88 -0.71																				
KPL HN 162.0 ES 18:22 21.85 0.32							HTL HE 91.2 AML 19:42 34.61 338 0.17																				
KPL HE 162.0 AML 18:22 23.31 10 0.44							HTL HE 91.2 AML 19:42 35.65 324 0.43																				
KPL HE 162.0 AML 18:22 23.59 9 0.52							HLM1 HZ 113.0 EP 19:42 25.71 -0.33																				
May 3 2009 Time: 17:35 08.0 UTC Magnitude: 0.7 ML																											
Lat: 55.836N	Lon: -3.210W						HLM1 HE 113.0 AML 19:42 28.74 0.12																				
Grid Ref: 324.23 kM	660.97 kmN						HLM1 HE 113.0 AML 19:42 42.88 777 0.17																				
Locality: PENICUIK,LOTHIAN							SWN1 HZ 128.0 EP 19:42 42.92 511 0.21																				
Velocity model: Lownet Xnear: 50.0 Xfar: 150.0							SWN1 HN 128.0 ES 19:42 44.14 0.31																				
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES							SWN1 HN 128.0 AML 19:42 45.15 948 0.31																				
EDB SZ 9.9 IP C 17:35 09.78 -0.61							SWN1 HN 128.0 AML 19:42 47.40 337 0.38																				
EDB HE 9.9 ES 17:35 11.83 -0.27							SSW EZ 130.0 IP C 19:42 28.74 0.12																				
EDB HN 9.9 AML 17:35 11.96 50 0.12							DYA HN 134.0 AML 19:42 45.35 462 0.23																				
EDB HE 9.9 AML 17:35 12.09 44 0.28							DYA HE 134.0 AML 19:42 45.43 366 0.40																				
EGL SZ 14.9 EP 17:35 11.83 0.60							YRE SZ 160.0 EP 19:42 33.61 0.39																				
EGL SZ 38.4 EP 17:35 15.50 0.54							WOL BZ 172.0 EP 19:42 34.47 -0.31																				
EGL HE 57.8 ES 17:35 24.52 -0.67							WOL BN 172.0 ES 19:42 34.73 0.40																				
EGL HE 57.8 AML 17:35 24.70 5 0.26							YLL SZ 173.0 EP 19:42 34.73 -0.15																				
EGL HE 57.8 AML 17:35 25.98 3 0.40																											

TABLE 2 : PHASE DATA

June 10 2009	Time: 04:59	56.4 UTC	Magnitude: 1.9 ML	KPL	HE	77.1	AML	23:43	39.67	22	0.24
Lat: 51.807N	Lon: -3.423W		Depth: 12.3 km	KPL	HN	77.1	AML	23:43	39.70	20	0.18
Grid Ref: 301.90	kME	213.05 kmN	RMS: 0.30 secs	EAB	SZ	79.7	IP	C	23:43	27.10	-0.15
Locality: VAYNOR, MERTHYR TYDFIL				KAC	SZ	91.5	EP		23:43	29.33	0.27
Velocity model: Mid Wales	Xnear: 150.0	Xfar: 300.0		ELO	SZ	99.2	EP		23:43	29.95	-0.37
Comment: 4KM SW OF ONICH				MDO	SZ	102.0	EP		23:43	30.30	-0.38
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES				PGB1	HZ	108.0	EP		23:43	31.89	0.22
MCH1 HZ 36.1 EP 05:00 02.76			-0.18	PGB1	HE	108.0	ES		23:43	44.34	-0.25
MCH1 HE 36.1 ES 05:00 07.68			0.06	PGB1	HN	108.0	AML		23:43	45.46	9 0.58
MCH1 HN 36.1 AML 05:00 07.83	193	0.10		PGB1	HE	108.0	AML		23:43	49.97	7 0.42
MCH1 HE 36.1 AML 05:00 07.94	238	0.19		EAU	SZ	147.0	EP		23:43	37.48	0.12
HEX SZ 86.5 IP C 05:00 10.71			-0.19	EDI	HZ	154.0	EP		23:43	38.75	0.32
HLM1 HZ 87.4 IP C 05:00 10.74			-0.31	EDI	HN	154.0	ES		23:43	56.35	0.06
HLM1 HE 87.4 ES 05:00 21.21			-0.37	EDI	HE	154.0	AML		23:44	01.47	4 0.44
HLM1 HE 87.4 AML 05:00 22.53	34	0.17		EDI	HN	154.0	AML		23:44	02.53	6 0.52
HLM1 HE 87.4 AML 05:00 22.81	44	0.21		MME1	SZ	158.0	EP		23:43	39.12	0.15
SSW EZ 110.0 EP 05:00 14.24			-0.16	MCD	SZ	159.0	EP		23:43	39.73	0.63
SWN1 HE 117.0 ES 05:00 29.23			0.05	MCD	SE	159.0	AML		23:44	00.04	14 0.18
HTL HZ 117.0 EP 05:00 15.40			-0.03	MCD	SN	159.0	AML		23:44	03.99	9 0.34
HTL HE 117.0 ES 05:00 29.08			-0.04	DRUM	HZ	173.0	EP		23:43	41.55	0.58
HTL HE 117.0 AML 05:00 30.00	22	0.12		DRUM	HN	173.0	ES		23:44	00.62	-0.05
HTL HN 117.0 AML 05:00 32.27	20	0.17		DRUM	HE	173.0	AML		23:44	02.96	16 0.38
SWN1 HZ 117.0 EP 05:00 15.97			0.50	DRUM	HN	173.0	AML		23:44	03.87	6 0.10
SWN1 HE 117.0 AML 05:00 30.30	45	0.19		ESK	HN	199.0	AML		23:44	08.87	2 0.54
SWN1 HN 117.0 AML 05:00 30.78	54	0.20		ESK	HE	199.0	AML		23:44	14.77	3 0.28
FOEL HZ 121.0 EP 05:00 16.62			0.45								
FOEL HE 121.0 ES 05:00 30.32			-0.05								
FOEL HN 121.0 AML 05:00 32.71	26	0.23									
FOEL HE 121.0 AML 05:00 33.39	28	0.57									
DYA HZ 157.0 EP 05:00 21.17			-0.16								
DYA HN 157.0 AML 05:00 39.55	36	0.19									
DYA HE 157.0 AML 05:00 40.00	27	0.34									
WOL BE 162.0 ES 05:00 40.38			-0.03								
WOL BE 162.0 AML 05:00 41.59	26	0.31									
WOL BN 162.0 AML 05:00 42.05	40	0.37									
WPM1 SZ 165.0 EP 05:00 22.68			0.34								
WLF1 HZ 178.0 EP 05:00 23.82			-0.10								
WLF1 HE 178.0 AML 05:00 45.89	8	0.25									
WLF1 HN 178.0 AML 05:00 46.54	6	0.11									
YRC SZ 179.0 EP 05:00 24.40			0.36								
June 14 2009	Time: 09:07	28.9 UTC	Magnitude: 1.6 ML								
Lat: 56.100N	Lon: -4.331W		Depth: 3.2 km								
Grid Ref: 255.03 kME	692.13 kmN		RMS: 0.50 secs								
Locality: BUCHLYVIE, STIRLING											
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0											
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES											
EAB SZ 9.9 EP 09:07 30.89			-0.18	PGB1	HZ	67.3	EP		00:05	32.04	-0.25
PGB1 HZ 33.5 EP 09:07 34.92			-0.14	PGB1	HE	67.3	ES		00:05	40.14	-0.42
PGB1 HE 33.5 ES 09:07 39.12			-0.45	PGB1	HN	67.3	AML		00:05	43.41	17 0.36
PGB1 HE 33.5 AML 09:07 39.37	59	0.20		PGB1	HE	67.3	AML		00:05	45.35	21 0.36
PGB1 HN 33.5 AML 09:07 39.56	37	0.28		ESY	SZ	78.0	EP		00:05	34.44	0.45
ELO SZ 56.3 EP 09:07 38.32			-0.53	DRUM	HZ	107.0	EP		00:05	38.24	-0.16
ELO HE 62.0 EP 09:07 39.98			0.28	DRUM	HN	107.0	ES		00:05	50.55	-0.58
EDI HZ 74.0 EP 9 09:07 40.06			-1.45	ESK	HE	108.0	EP		00:05	55.07	42 0.12
EDI HE 74.0 ES 9 09:07 48.51			-0.77	ESK	HN	108.0	ES		00:05	55.29	33 0.18
EDI HE 74.0 AML 09:07 49.75	17	0.22		MME1	SZ	128.0	EP		00:05	42.24	0.50
EDI HE 74.0 AML 09:07 50.19	21	0.30		MDO	SZ	139.0	EP		00:05	44.10	0.82
EGL SZ 88.3 EP 09:07 43.98			0.19	KSB	SZ	150.0	EP		00:05	45.64	0.84
ESY SZ 109.0 EP 09:07 47.24			0.26	MCD	SZ	152.0	EP		00:05	45.71	0.60
ESK HZ 112.0 EP 09:07 48.07			0.59	MCD	SE	152.0	ES		00:06	02.80	0.06
ESK HN 112.0 ES 09:08 00.64			-0.42	MCD	SE	152.0	AML		00:06	05.23	39 0.36
ESK HN 112.0 AML 09:08 04.04			21 0.16	MCD	SN	152.0	AML		00:06	05.59	28 0.12
ESK HE 112.0 AML 09:08 05.83	17	0.34		GAL1	HZ	165.0	EP		00:05	47.74	0.78
ECK SZ 127.0 EP 09:07 50.45			0.64	GAL1	HN	165.0	ES		00:06	05.32	-0.62
KSB SZ 141.0 EP 09:07 52.10			0.32	GAL1	HE	165.0	AML		00:06	07.98	18 0.48
DRUM HZ 145.0 EP 09:07 52.27			-0.13	GAL1	HN	165.0	AML		00:06	48.65	1.13
DRUM HN 145.0 ES 09:08 08.76			-0.81	KPL	HZ	170.0	EP		00:05	06.27	-0.64
DRUM HE 145.0 AML 09:08 12.48	16	0.38		KPL	HE	170.0	AML		00:06	09.25	6 0.28
DRUM HN 145.0 AML 09:08 13.05	17	0.46		KPL	HN	170.0	ES		00:06	09.27	8 0.24
MME1 SZ 159.0 EP 09:07 55.44			1.00	KAC	SZ	170.0	EP		00:05	47.48	-0.09
KPL HZ 160.0 EP 09:07 55.47			1.00	KESW	HN	188.0	EP		00:05	51.55	1.66
KPL HE 160.0 AML 09:08 15.25	11	0.22		KESW	HE	188.0	AML		00:06	14.91	5 0.78
KPL HN 160.0 AML 09:08 17.08	8	0.52		KESW	HN	188.0	AML		00:06	15.61	5 0.40
MCD SZ 178.0 EP 09:07 56.69			-0.28	MVH1	SZ	190.0	EP		00:05	52.49	2.46
MCD SE 178.0 AML 09:08 20.55	11	0.66									
MCD SN 178.0 AML 09:08 23.52	11	0.46									
June 17 2009	Time: 01:57	16.5 UTC	Magnitude: 1.3 ML								
Lat: 49.837N	Lon: -4.885W		Depth: 6.0 km								
Grid Ref: 192.58 kME	-2.96 kmN		RMS: 0.40 secs								
Locality: LIZARD POINT, CORNWALL											
Velocity model: Cornwall Xnear: 200.0 Xfar: 500.0											
Comment: 25KM SE OF LIZARD PT											
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES											
DYA HZ 95.2 EP 01:57 32.18			-0.87	KBI1	SZ	80.0	EP	00:18	15.44	0.00	
DYA HN 95.2 ES 01:57 45.91			0.09	HPK	HZ	112.0	EP	00:18	20.41	0.42	
DYA HE 95.2 AML 01:57 46.97	6	0.26		HPK	HE	112.0	ES	00:18	32.73	-0.25	
DYA HE 95.2 AML 01:57 47.50	11	0.30		HPK	HN	112.0	AML	00:18	36.12	31 0.46	
HTL HZ 132.0 EP 01:57 38.58			0.13	MCH1	HZ	232.0	EP	00:18	35.35	23 0.16	
HTL HE 132.0 ES 01:57 55.71			0.34	MCH1	HN	232.0	ES	00:18	34.30	-0.60	
HTL HE 132.0 AML 01:57 59.09	8	0.48		MCH1	HN	232.0	AML	00:19	59.13	0.35	
HTL HE 132.0 AML 01:57 59.15	10	0.52		MCH1	HE	232.0	AML	00:19	05.06	2 0.16	
JSA HN 209.0 ES 01:58 13.00			-0.08	SKP	EZ	131.0	EP	01:47	41.31	-0.75	
JLP SZ 212.0 ES 01:58 13.91			0.30	SKP	EZ	131.0	ES	01:47	57.76	0.18	
JRS SZ 215.0 ES 01:58 13.96			-0.28	SSW	EZ	157.0	EP	01:47	46.37	0.46	
JQE SZ 218.0 ES 01:58 15.39			0.40	SSW	EZ	157.0	ES	01:48	04.24	0.00	
June 21 2009	Time: 23:43	14.0 UTC	Magnitude: 1.4 ML								
Lat: 56.677N	Lon: -5.282W		Depth: 7.2 km								
Grid Ref: 198.96 kME	758.71 kmN		RMS: 0.30 secs								
Locality: LOCH LINNHE, HIGHLAND											
Velocity model: Lownet Xnear: 100.0 Xfar: 300.0											
Comment: 4KM SW OF ONICH											
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES											
KSB SZ 59.9 EP 23:43 24.02			-0.18	SWN1	HZ	108.0	EP	01:47	38.09	-0.49	
KPL HZ 77.1 EP 23:43 27.02			0.24	SWN1	HN	108.0	ES	01:47	52.10	0.53	
KPL HE 77.1 ES 23:43 35.86			-0.28	SWN1	HN	108.0	AML	01:47	55.57	19 0.74	
KPL HE 77.1 ES 23:43 35.86			0.28	SWN1	HE	108.0	AML	01:47	57.90	20 0.46	
JKP EZ 218.0 ES 01:58 15.39			0.40	JKP	SZ	160.0	EP	01:47	45.65	-0.55	

TABLE 2 : PHASE DATA

JQE	SZ	163.0	EP	01:47	47.41	0.72	EAB	SZ	89.3	EP	15:43	02.45	-0.03
JRS	SZ	165.0	EP	01:47	47.48	0.49	KESW	HZ	114.0	EP	15:43	07.07	0.80
JRS	SE	165.0	ES	01:48	05.97	-0.14	ESY	SZ	116.0	EP	15:43	06.44	-0.24
JSA	HZ	168.0	EP	01:47	47.93	0.59							
JSA	HE	168.0	ES	01:48	06.62	-0.09	July 16 2009					Magnitude: 1.7 ML	
JSA	HZ	168.0	AML	01:48	12.00	8 0.26	Lat: 57.153N					Depth: 4.5 km	
JSA	HN	168.0	AML	01:48	12.30	6 0.56	Grid Ref: 200.30 kmE					RMS: 0.50 secs	
ELSH	HZ	183.0	EP	01:47	49.12	-0.20	Locality: SHIEL BRIDGE,HIGHLAND						
DYA	HZ	186.0	EP	01:47	49.11	-0.63	Velocity model: Lownet Xnear: 200.0 Xfar: 300.0						
DYA	HN	186.0	ES	01:48	10.53	-0.33	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES						
DYA	HN	186.0	AML	01:48	14.34	4 0.58	KSB SZ 9.6 IP D 10:40 57.84						
DYA	HE	186.0	AML	01:48	15.16	4 0.52	KAC SZ 38.5 EP 10:41 03.22						
MCH1	HZ	196.0	EP	01:47	50.74	-0.13	MDO SZ 65.1 EP 10:41 07.17						
MCH1	HE	196.0	ES	01:48	13.17	0.34	MVH1 SZ 109.0 EP 10:41 14.68						
MCH1	HE	196.0	AML	01:48	15.50	6 0.44	MCD SZ 132.0 EP 10:41 18.29						
MCH1	HN	196.0	AML	01:48	15.53	5 0.40	MCD SE 132.0 ES 10:41 32.54						
							MME1 SZ 142.0 EP 10:41 18.70						
July 1 2009							DRUM HZ 173.0 EP 10:41 23.36						
Lat: 52.275N							DRUM HN 173.0 ES 10:41 43.54						
Lon: 2.984W							DRUM HN 173.0 AML 10:41 45.51	11	0.24				
Grid Ref: 739.91 kmE							DRUM HE 173.0 AML 10:41 45.99	8	0.10				
Locality: SOUTHERN NORTH SEA													
Velocity model: Lownet Xnear: 400.0 Xfar: 800.0													
Comment: 125KM ENE OF IPSWICH													
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES													
AW11 SZ 121.0 EP 19:24 29.24						0.13	July 21 2009					Magnitude: 1.3 ML	
AEU SZ 125.0 EP 19:24 29.63						-0.05	Lat: 55.862N					Depth: 7.5 km	
AEU SN 125.0 ES 19:24 44.49						-0.01	Grid Ref: 199.46 kmE					RMS: 0.40 secs	
ABA1 SZ 142.0 EP 19:24 32.37						0.23	Locality: KYLES OF BUTE						
ELSH HZ 179.0 EP 19:24 37.13						-0.10	Velocity model: Lownet Xnear: 150.0 Xfar: 300.0						
ELSH HN 179.0 ES 19:24 57.77						0.20	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES						
ELSH HN 179.0 AML 19:25 06.18			20	0.48			PGB1 HZ 45.5 IP C 18:38 34.76					-0.05	
ELSH HE 179.0 AML 19:25 08.58			21	0.70			PGB1 HE 45.5 AML 18:38 44.69	10	0.36				
HLM1 HZ 400.0 EP 19:25 04.84						-0.08	PGB1 HN 45.5 EP 18:38 47.14	7	0.32				
HLM1 HN 400.0 ES 19:25 45.38						-0.09	EAB SZ 65.2 EP 18:38 37.24					-0.63	
HLM1 HN 400.0 AML 19:26 10.13			5	0.65			GAL1 HZ 115.0 EP 18:38 45.80					0.21	
HLM1 HE 400.0 AML 19:26 10.37			4	0.62			GAL1 HE 115.0 ES 18:38 58.70					-0.55	
MCH1 HZ 411.0 EP 19:25 05.96						-0.25	GAL1 HE 115.0 AML 18:39 02.14	13	0.18				
MCH1 HN 411.0 AML 19:25 50.07			2	0.56			GAL1 HN 115.0 AML 18:39 02.23	10	0.62				
MCH1 HE 411.0 AML 19:25 51.62			2	0.14			ELO SZ 115.0 EP 18:38 45.56					-0.06	
							ELO HZ 140.0 EP 18:38 49.64					0.38	
July 6 2009							ELO HN 140.0 ES 18:39 05.56					-0.04	
Lat: 56.089N							EKS HN 140.0 AML 18:39 08.34	9	0.36				
Lon: -4.334W							EKS HE 140.0 AML 18:39 08.96	6	0.20				
Grid Ref: 254.80 kmE							ECK SZ 151.0 EP 18:38 51.55					0.63	
690.92 kmN							DRUM HZ 205.0 EP 18:38 58.09					0.28	
RMS: 0.40 secs							DRUM HN 205.0 AML 18:39 28.80	7	0.36				
Locality: BUCHLYVIE, STIRLING							DRUM HE 205.0 AML 18:39 29.94	6	0.66				
Velocity model: Lownet Xnear: 150.0 Xfar: 300.0													
Comment: 7KM NE OF LANGHOLM													
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES													
EAB SZ 11.1 IP C 23:09 36.24						-0.67	July 22 2009					Magnitude: 0.9 ML	
PGB1 HZ 32.2 EP 23:09 40.33						-0.14	Lat: 55.212N					Depth: 8.3 km	
PGB1 HN 32.2 ES 23:09 44.27						-0.55	Grid Ref: 340.00 kmE					RMS: 0.30 secs	
PGB1 HE 32.2 AML 23:09 44.72			24	0.20			Locality: LANGHOLM,D & G						
PGB1 HN 32.2 AML 23:09 44.92			23	0.26			Velocity model: Lownet Xnear: 100.0 Xfar: 200.0						
EDI HZ 73.8 EP 9 23:09 48.05						0.89	Comment: 7KM NE OF LANGHOLM						
EDI HN 73.8 ES 9 23:09 56.48						-0.81	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES						
EDI HE 73.8 AML 23:09 57.30			7	0.24			ECK SZ 12.3 IP C 05:16 20.48					0.05	
EDI HN 73.8 AML 23:09 57.60			6	0.15			EKS HZ 20.3 EP 05:16 21.95					0.32	
EKS HZ 111.0 EP 23:09 53.30						0.28	EKS HE 20.3 ES 05:16 24.89					0.31	
EKS HE 111.0 ES 23:10 06.18						-0.36	EKS HN 20.3 AML 05:16 25.06	23	0.10				
EKS HE 111.0 AML 23:10 09.37			10	0.16			EKS HE 20.3 AML 05:16 25.19	20	0.21				
EKS HE 111.0 AML 23:10 11.17			8	0.34			BHH SZ 21.9 EP 05:16 21.94					0.07	
ECK SZ 126.0 EP 23:09 55.86						0.52	BHH SE 21.9 ES 05:16 24.32					-0.68	
GAL1 HZ 138.0 EP 23:09 57.33						0.27	BHH SN 21.9 AML 05:16 24.68	54	0.20				
GAL1 HN 138.0 ES 23:10 13.69						0.16	BHH SE 21.9 AML 05:16 25.20	33	0.20				
GAL1 HE 138.0 AML 23:10 14.82			9	0.24			BBO1 SZ 56.3 EP 05:16 27.76					0.57	
GAL1 HN 138.0 AML 23:10 15.21			4	0.16			BBO1 SZ 56.3 ES 05:16 34.25					0.04	
DRUM HZ 146.0 EP 23:09 58.45						0.22	BBO1 SE 56.3 AML 05:16 35.29	8	0.44				
DRUM HE 146.0 ES 23:10 15.32						-0.23	BBO1 SN 56.3 AML 05:16 35.99	6	0.12				
DRUM HE 146.0 AML 23:10 17.57			6	0.50			KESW HZ 70.1 EP 05:16 29.41					0.07	
DRUM HN 146.0 AML 23:10 20.03			8	0.52			KESW HN 70.1 ES 05:16 37.63					-0.30	
KPL HZ 161.0 EP 23:10 00.89						0.59	KESW HE 70.1 AML 05:16 38.47	4	0.27				
KPL HE 161.0 AML 23:10 20.55			4	0.24			KESW HE 70.1 ES 05:16 39.16	4	0.34				
KPL HN 161.0 AML 23:10 23.18			4	0.62			EDI HN 80.7 ES 05:16 40.16					-0.56	
							EDI HN 80.7 AML 05:16 40.39	7	0.32				
July 7 2009							EDI HN 80.7 EP 05:16 40.89	4	0.36				
Lat: 53.253N							GAL1 HZ 119.0 EP 05:16 37.01					0.06	
Lon: -1.809W							GAL1 HN 119.0 ES 05:16 51.20					0.11	
Grid Ref: 412.74 kmE							GAL1 HN 119.0 AML 05:16 52.31	6	0.32				
372.94 kmN							GAL1 HE 119.0 AML 05:16 53.49	3	1.14				
RMS: 0.20 secs													
Locality: BUXTON, DERBYSHIRE													
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0													
Comment: COLLAPSE EVENT													
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES													
KB11 SZ 18.8 EP 21:49 28.42						-0.03	July 23 2009					Magnitude: 1.0 ML	
STNC HZ 32.1 EP 21:49 30.66						-0.03	Lat: 56.101N					Depth: 4.2 km	
STNC HE 32.1 ES 21:49 35.19						-0.03	Grid Ref: 257.27 kmE					RMS: 0.50 secs	
STNC HN 32.1 AML 21:49 38.60			122	0.50			Locality: BUCHLYVIE, STIRLING						
STNC HE 32.1 AML 21:49 40.89			156	0.58			Velocity model: Lownet Xnear: 150.0 Xfar: 300.0						
MCH1 HZ 161.0 EP 21:49 50.90						0.24	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES						
MCH1 HE 161.0 ES 21:50 09.94						0.18	EAB SZ 10.1 IP 17:52 08.60					-0.31	
MCH1 HN 161.0 AML 21:50 12.08			38	0.38			PGB1 HZ 34.3 EP 17:52 12.72					0.03	
MCH1 HE 161.0 AML 21:50 12.29			26	0.40			PGB1 HE 34.3 ES 17:52 16.73					-0.50	
KESW HZ 171.0 EP 21:49 52.63						0.52	PGB1 HN 34.3 AML 17:52 17.25	8	0.48				
KESW HE 171.0 ES 21:50 12.09						-0.18	EDI HE 71.8 ES 17:52 26.66					-0.61	
KESW HN 171.0 AML 21:50 14.78			18	0.42			EDI HE 71.8 AML 17:52 27.27	5	0.44				
KESW HE 171.0 AML 21:50 15.01			15	0.74			EDI HE 71.8 AML 17:52 32.42	7	0.62				
							ESK HZ 111.0 EP 17:52 25.09					0.50	
July 8 2009							ESK HN 111.0 ES 17:52 37.70				</td		

TABLE 2 : PHASE DATA

Comment:	FELT	LLANFACHRAETH...	Intensity:	3	GAL1	HN	87.9	AML	14:42	55.14	216	0.29							
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES	GAL1	HE	87.9	AML	14:42	56.85	103	0.20		
WLF1	HZ	10.3	IP	D	12:17	33.88	0.07			PGB1	HZ	90.3	EP	14:42	44.26		0.37		
WLF1	HE	10.3	ES		12:17	35.29	0.00			PGB1	HN	90.3	ES	14:42	54.74		-0.18		
WLF1	HE	10.3	AML		12:17	35.46	672 0.10			PGB1	HN	90.3	AML	14:42	57.74	165	0.16		
WLF1	HN	10.3	AML		12:17	35.56	810 0.10			PGB1	HE	90.3	AML	14:42	57.77	296	0.21		
WME	SZ	11.0	IP	C	12:17	33.91	0.00			ESY	SZ	94.4	EP	14:42	44.68		0.12		
YRC	SZ	15.5	IP	C	12:17	34.57	0.01			EAB	SZ	119.0	EP	14:42	48.87		0.45		
YLL	SZ	32.5	IP	D	12:17	37.23	-0.04			HPK	HE	186.0	AML	14:43	22.89	92	0.22		
WPM1	SZ	39.4	IP	D	12:17	38.38	-0.03			HPK	HN	186.0	AML	14:43	24.51	80	0.29		
YRE	SZ	43.7	EP		12:17	39.07	-0.03			GMM	SZ	193.0	EP	14:42	57.49		-1.16		
HLM1	HZ	143.0	IP	D	12:17	55.05	0.21												
HLM1	HE	143.0	ES		12:18	10.40	-0.22												
HLM1	HN	143.0	AML		12:18	13.80	28 0.22												
HLM1	HE	143.0	AML		12:18	14.62	21 0.16												
STNC	HN	154.0	ES		12:18	13.88	0.44												
STNC	HN	154.0	AML		12:18	15.49	174 0.30												
STNC	HB	154.0	AML		12:18	15.98	138 0.58												
GALL1	HZ	167.0	EP		12:17	58.22	0.09												
GALL1	HE	167.0	ES		12:18	15.85	-0.30												
GALL1	HE	167.0	AML		12:18	18.10	48 0.36												
GALL1	HN	167.0	AML		12:18	18.10	13 0.48												
MCH1	HZ	182.0	EP		12:17	59.31	-0.75												
MCH1	HE	182.0	ES		12:18	19.78	0.38												
MCH1	HE	182.0	AML		12:18	22.54	46 0.54												
MCH1	HN	182.0	AML		12:18	22.57	29 0.28												
ESK	HZ	231.0	EP		12:18	05.24	-0.95												
ESK	HE	231.0	ES		12:18	29.38	-0.31												
ESK	HN	231.0	AML		12:18	37.48	7 0.24												
ESK	HE	231.0	AML		12:18	40.19	9 0.28												
July 26 2009		Time: 22:46 30.9 UTC		Magnitude: 2.4 ML		Lat: 59.696N Lon: 1.719W		Depth: 10.0 km		Grid Ref: 609.24 kmE 1095.86 kmN		RMS: 0.30 secs		Locality: NORTHERN NORTH SEA		Velocity model: North Sea Xnear: 500.0 Xfar: 1000.0			
Comment: 170KM ESE 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	169.0	EP		22:46	56.52	0.05			BWH	SZ	14.2	EP	14:47	40.52		-0.10		
LRW	HN	169.0	ES		22:47	15.11	0.00			ESK	HZ	18.5	EP	14:47	41.46		0.11		
LRW	HE	169.0	AML		22:47	18.76	28 0.16			ESK	HN	18.5	ES	14:47	43.87		-0.15		
LRW	HN	169.0	AML		22:47	20.22	41 0.30			ESK	HE	18.5	AML	14:47	44.57	4	0.26		
MCD	SZ	372.0	EP		22:47	21.64	-0.08			ECK	SZ	22.9	IP	C	14:47	42.23		0.12	
MCD	SE	372.0	ES		22:47	58.60	-0.20			BHH	SZ	23.4	EP		14:47	42.34		0.17	
MCD	SE	372.0	AML		22:48	00.82	11 0.38			BHH	SE	23.4	ES		14:47	45.29		-0.15	
MCD	SN	372.0	AML		22:48	00.83	11 0.38			KESW	HZ	75.1	EP		14:47	45.57	15	0.20	
MME1	SZ	380.0	ES		22:48	00.59	0.03			KESW	HN	75.1	ES		14:47	56.96			
MVH1	SZ	394.0	ES		22:48	02.97	-0.40			GAL1	HZ	88.1	EP	C	14:50	49.40		-0.09	
MDO	SZ	434.0	ES		22:48	12.59	0.59			GAL1	HN	88.1	AML		14:50	59.32		-0.95	
July 27 2009		Time: 11:11 15.9 UTC		Magnitude: 1.4 ML		Lat: 58.595N Lon: -4.851W		Depth: 4.1 km		Grid Ref: 234.33 kmE 970.93 kmN		RMS: 0.30 secs		Locality: DURNESS, HIGHLAND		Velocity model: Lownet Xnear: 150.0 Xfar: 300.0			
Comment: 170KM ESE OF LERWICK																			
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES
RSC	SZ	33.1	EP		11:11	21.77	-0.24			BWH	SZ	12.3	EP		14:50	37.44		0.12	
MVH1	SZ	84.4	EP		11:11	30.33	0.10			ESK	HZ	20.3	EP		14:50	38.36		-0.32	
RRR	SZ	99.5	EP		11:11	32.47	-0.08			ESK	HN	20.3	ES		14:50	40.92		-0.65	
RRR	SE	99.5	ES		11:11	44.66	-0.08			ESK	HE	20.3	AML		14:50	42.27	45	0.18	
RRR	SE	99.5	AML		11:11	48.00	16 0.44			ESK	HN	20.3	AML		14:50	41.26	36	0.12	
RRR	SN	99.5	AML		11:11	49.21	9 0.40			BHH	SZ	22.6	EP		14:50	39.38		0.33	
KAC	SZ	125.0	EP		11:11	36.54	0.01			BHH	SN	22.6	ES		14:50	42.29		0.06	
KAC	SZ	125.0	ES		11:11	51.40	-0.22			BHH	SN	22.6	AML		14:50	42.57	99	0.16	
RRH	SZ	131.0	EP		11:11	37.01	-0.51			KESW	HZ	75.1	EP		14:50	47.78		0.27	
MDO	SZ	132.0	EP		11:11	37.93	0.31			KESW	HN	75.1	ES		14:50	56.96		0.11	
MCD	SZ	147.0	EP		11:11	39.96	0.18			GAL1	HZ	88.1	EP	C	14:50	49.40		-0.09	
MCD	SE	147.0	ES		11:11	56.71	-0.54			GAL1	HN	88.1	AML		14:50	50.79	10	0.19	
MCD	SN	147.0	AML		11:11	00.58	7 0.78			GAL1	HE	88.1	AML		14:51	02.60	7	0.09	
KPL	HZ	148.0	EP		11:11	40.39	0.55			PGB1	HZ	90.6	EP		14:50	50.84		0.95	
KPL	HE	148.0	ES		11:11	57.63	0.28			PGB1	HN	90.6	AML		14:51	03.46	7	0.29	
KPL	HE	148.0	AML		11:12	01.35	10 0.18			PGB1	SZ	94.4	EP		14:50	50.67		0.16	
KPL	HN	148.0	AML		11:12	03.89	6 0.46												
KSB	SZ	158.0	EP		11:11	41.65	0.27												
August 8 2009		Time: 14:42 28.8 UTC		Magnitude: 2.4 ML		Lat: 55.229N Lon: -3.489W		Depth: 4.2 km		Grid Ref: 305.31 kmE 593.77 kmN		RMS: 0.40 secs		Locality: JOHNSTONEBRIDGE, D & G		Velocity model: Lownet Xnear: 100.0 Xfar: 200.0			
Comment: 170KM ESE OF LERWICK																			
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES
BWH	SZ	12.1	EP		14:42	31.64	0.26			BWH	SZ	13.7	EP		18:17	08.56		0.04	
ESK	HZ	20.5	EP		14:42	32.70	-0.08			ESK	HZ	19.3	EP		18:17	09.53		0.16	
ESK	HN	20.5	ES		14:42	34.93	-0.77			ESK	HE	19.3	ES		18:17	11.87		-0.34	
ESK	HE	20.5	AML		14:42	35.56	532 0.16			ESK	HE	19.3	AML		18:17	12.22	10	0.12	
ESK	HN	20.5	AML		14:42	36.48	707 0.22			ESK	HN	20.0	AML		18:17	12.86	10	0.36	
BHH	SZ	22.9	EP		14:42	33.58	0.39			BHH	SZ	23.2	EP		10:30	12.41		0.37	
BHH	SE	22.9	ES		14:42	36.57	0.17			BHH	SN	23.2	ES		10:30	15.23		-0.08	
BHH	SN	22.9	AML		14:42	36.77	969 0.20			BHH	SE	23.2	AML		10:30	15.49	42	0.32	

TABLE 2 : PHASE DATA

ESK	HN	20.7	ES	14:38	39.72	-0.84	KPL	HE	52.2	AML	17:23	24.16	6	0.20			
ESK	HE	20.7	AML	14:38	40.10	45 0.10	KPL	HN	52.2	AML	17:23	24.29	9	0.16			
ESK	HN	20.7	AML	14:38	41.10	53 0.18	MDO	SZ	86.3	EP	17:23	22.10		0.00			
BHH	SZ	22.8	EP	14:38	38.27	0.36	MVH1	SZ	87.1	EP	17:23	22.16		-0.03			
BHH	SE	22.8	ES	14:38	41.24	0.10	MCD	SZ	144.0	EP	17:23	30.97		0.09			
BHH	SN	22.8	AML	14:38	41.45	150 0.18	MCD	SN	144.0	AML	17:23	49.92	10	0.92			
BHH	SE	22.8	AML	14:38	41.45	172 0.32	MCD	SE	144.0	AML	17:23	50.77	5	0.22			
ECK	SZ	23.5	EP	14:38	38.11	0.05	MME1	SZ	169.0	EP	17:23	34.29		-0.17			
EBL	SZ	67.0	EP	14:38	45.18	0.29											
GAL1	HZ	87.7	EP	14:38	47.97	-0.06	September 7 2009										
GAL1	HN	87.7	ES	14:38	57.99	-0.66	Time: 23:06 20.0 UTC										
GAL1	HN	87.7	AML	14:39	01.43	19 0.48	Lat: 55.23N										
GAL1	HE	87.7	AML	14:39	01.48	8 0.16	Lon: -3.48W										
ESY	SZ	94.8	EP	14:38	49.50	0.33	Grid Ref: 305.63 kmE 593.87 kmN										
EAB	SZ	120.0	EP	14:38	53.49	0.47	Locality: JOHNSTONEBRIDGE,D & G										
August 14 2009							Velocity model: Lownet Xnear: 100.0 Xfar: 200.0										
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES								
BWH	SZ	11.4	EP	08:28	55.67	0.45	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES	
ESK	HZ	21.2	EP	08:28	56.67	-0.20	BWH	SZ	13.1	EP	23:06	22.82				0.00	
ESK	HE	21.2	ES	08:28	59.22	-0.65	ESK	HZ	19.5	EP	23:06	23.89				0.03	
ESK	HN	21.2	AML	08:29	00.48	173 0.21	ESK	HE	19.5	AML	23:06	26.42				-0.26	
ESK	HE	21.2	AML	08:29	01.33	122 0.26	ESK	HE	19.5	AML	23:06	26.58				0.10	
BHH	SZ	23.8	IP	D	08:28	57.58	ECK	SZ	23.0	EP	23:06	24.57				0.10	
BHH	SE	23.8	ES	08:29	00.53	-0.10	ECK	SZ	23.0	ES	23:06	27.31				-0.43	
BHH	SE	23.8	AML	08:29	00.73	326 0.22	BHH	SZ	23.0	ES	23:06	27.65				0.31	
BHH	SN	23.8	AML	08:29	00.74	222 0.20	BHH	SN	23.0	AML	23:06	27.94	99	0.18		-0.03	
ECK	SZ	24.5	IP	C	08:28	57.35	BHH	SE	23.0	AML	23:06	27.94	112	0.34			
GCD	SZ	49.6	EP		08:29	00.85	ECD	SZ	51.0	EP	23:06	28.45				-0.44	
BBO1	SZ	57.5	EP		08:29	03.09	ECD	SZ	65.6	EP	23:06	31.62				0.41	
BBO1	SE	57.5	ES		08:29	10.54	ECD	HZ	76.0	EP	23:06	33.20				0.42	
BBO1	SE	57.5	AML		08:29	12.52	ECD	HZ	76.0	ES	23:06	42.42				0.30	
BBO1	SN	57.5	AML		08:29	14.79	ECD	SN	76.0	AML	23:06	45.43	9	0.18			
EBL	SZ	66.8	EP		08:29	04.37	ECD	SE	76.0	AML	23:06	45.40	9	0.36			
EAU	SZ	68.4	EP		08:29	04.75	ECD	HZ	78.6	EP	23:06	32.78				-0.39	
KESW	HZ	76.0	EP		08:29	05.96	ECD	HZ	78.6	ES	23:06	41.97				-0.81	
KESW	HE	76.0	ES		08:29	15.58	ECD	HE	78.6	AML	23:06	43.45	10	0.28			
KESW	HE	76.0	AML		08:29	16.99	ECD	HE	78.6	AML	23:06	44.72	10	0.24			
KESW	HN	76.0	AML		08:29	22.71	ECD	HN	89.0	EP	23:06	34.53				-0.24	
EDI	HZ	79.6	EP		08:29	06.46	ECD	HN	89.0	ES	23:06	44.88				-0.67	
EDI	HE	79.6	ES		08:29	15.94	ECD	SE	89.0	AML	23:06	46.20	9	0.24			
EDI	HN	79.6	AML		08:29	17.12	ECD	SE	89.0	AML	23:06	45.38	6	0.60			
EDI	HE	79.6	AML		08:29	17.14	ECD	HZ	90.2	EP	23:06	35.52				0.55	
GAL1	HZ	87.2	EP		08:29	07.31	ECD	HZ	90.2	ES	23:06	46.22				0.31	
GAL1	HE	87.2	ES		08:29	17.52	ECD	HN	90.2	AML	23:06	48.56	11	0.70			
GAL1	HN	87.2	AML		08:29	20.69	ECD	HE	90.2	AML	23:06	48.53	12	0.36			
PGB1	HZ	89.4	EP		08:29	08.75	ECD	HN	119.0	EP	23:06	35.92				0.43	
PGB1	HE	89.4	ES		08:29	18.86	ECD	SE	119.0	EP	23:06	40.08				0.63	
August 27 2009							September 15 2009										
Lat: 60.14N	Lon: -0.251W						Time: 00:30 22.2 UTC										
Grid Ref: 497.13 kmE	1140.72 kmN						Magnitude: 3.3 ML										
Locality: SHETLAND ISLANDS							Lat: 53.745N	Lon: 1.118W									
Velocity model: Lownet Xnear: 500.0 Xfar: 1000.0							Grid Ref: 605.58 kmE 432.16 kmN										
Comment: 50KM EAST OF LERWICK							Locality: SOUTHERN NORTH SEA										
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES								
LRW	HZ	51.5	IP	D	13:45	11.64	0.01	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES
LRW	HE	51.5	ES		13:45	18.09	-0.01	LRW	HZ	101.0	EP	00:30	39.43				0.56
LRW	HN	51.5	AML		13:45	19.85	68 0.23	LRW	HE	101.0	ES	00:30	50.73				-0.27
LRW	HE	51.5	AML		13:45	21.06	69 0.17	LRW	HN	101.0	AML	00:30	55.58	1762	0.32		
LRW	HZ	51.5	E		13:45	12.32		LRW	HN	101.0	AML	00:30	56.42	1987	0.28		
August 27 2009							AEU	SZ	125.0	EP	00:30	42.66				-0.01	
Lat: 52.765N	Lon: -2.136W						AEU	SE	125.0	ES	00:30	57.49				-0.08	
Grid Ref: 390.82 kmE	318.65 kmN						AEU	SN	125.0	AML	00:30	59.98	209	0.48			
Locality: STAFFORD,STAFFORDSHIRE							AEU	SE	125.0	AML	00:31	00.43	149	0.24			
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0							HPK	HZ	182.0	EP	00:30	50.77				0.21	
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES								
STNC	HZ	36.6	EP		22:53	28.05	0.10	HPK	HE	182.0	ES	00:30	11.26				0.03
STNC	HN	36.6	ES		22:53	32.45	-0.41	HPK	HE	182.0	AML	00:31	17.31	722	0.24		
STNC	HN	36.6	AML		22:53	32.77	43 0.20	HPK	HN	300.0	EP	00:31	51.32	110	0.44		
STNC	HE	36.6	AML		22:53	33.28	39 0.14	HPK	HN	300.0	ES	00:31	52.03	98	0.54		
HLM1	HZ	57.4	EP		22:53	31.99	0.71	HPK	HN	300.0	AML	00:31	37.86				0.40
HLM1	HE	57.4	ES		22:53	38.58	-0.04	FOEL	HN	303.0	EP	00:31	54.46	216	0.48		0.37
HLM1	HE	57.4	AML		22:53	39.24	9 0.20	FOEL	HN	303.0	ES	00:31	55.46	77	0.50		
HLM1	HN	57.4	AML		22:53	39.32	9 0.52	WOL	BE	314.0	AML	00:31	59.87	113	1.05		
KBI1	SZ	68.1	EP		22:53	32.99	0.09	WOL	BN	314.0	AML	00:32	00.34	143	0.50		
FOEL	HZ	73.0	EP		22:53	33.79	0.08	SWN1	HZ	317.0	EP	00:31	07.98				0.51
MCH1	HZ	104.0	EP		22:53	38.34	-0.07	SWN1	HE	317.0	ES	00:31	59.20	266	0.54		
MCH1	HN	104.0	ES		22:53	50.34	-0.61	SWN1	HN	317.0	AML	00:32	01.65	249	0.56		
MCH1	HN	104.0	AML		22:53	50.91	7 0.28	ECK	SZ	318.0	EP	00:31	07.61				1.08
MCH1	HE	104.0	AML		22:53	52.50	4 0.28	ECK	HN	325.0	AML	00:32	00.44	274	0.56		
YRE	SZ	156.0	EP		22:53	46.68	0.48	ECK	HE	330.0	ES	00:31	01.34	83	0.60		
September 3 2009							ECK	HN	330.0	AML	00:31	49.64	29	0.50			
Lat: 57.808N	Lon: -5.634W						ECK	HN	330.0	EP	00:32	12.03	37	0.46			
Grid Ref: 184.13 kmE	885.59 kmN						WPM1	SZ	338.0	EP	00:31	10.48				0.44	
Locality: LOCH EWE,HIGHLAND							WPM1	HN	339.0	EP	00:31	07.95				-2.18	
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0							MCH1	HN	339.0	AML	00:31	57.42	89	0.36			
STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES								
RRR	SZ	11.6	IP	C	17:23	10.17	0.16	MCH1	HN	339.0	AML	00:31	57.68	86	0.66		
RRR	SE	11.6	AML		17:23	10.51	194 0.16</										

TABLE 2 : PHASE DATA

TABLE 2 : PHASE DATA

CCA1	HN	85.9	AML	17:12	38.83	74	0.38	-0.46	DYA	HN	149.0	AML	17:53	42.61	35	0.22
DYA	HZ	162.0	EP	17:12	37.66				December 9 2009				Time: 05:29 07.0 UTC	Magnitude: 1.6 ML		
DYA	HN	162.0	AML	17:13	02.87	20	0.26		Lat: 53.252N	Lon: -1.821W			Depth: 1.1 km			
DYA	HE	162.0	AML	17:13	05.06	18	0.26		Grid Ref: 411.94 kmE	372.82 kmN			RMS: 0.20 secs			
HTL	HZ	189.0	EP	17:12	42.41			0.81	Locality: BUXTON, DERBYSHIRE							
HTL	HE	189.0	ES	17:13	03.78			0.83	Velocity model: Lownet	Xnear: 100.0	Xfar: 200.0					
HTL	HE	189.0	AML	17:13	07.65	23	0.34		Comment: COLLAPSE TYPE							
HTL	HN	189.0	AML	17:13	10.32	22	0.48									
November 16 2009 Time: 15:43 15.4 UTC Magnitude: 2.0 ML																
Lat: 56.413N Lon: -5.412W Depth: 7.7 km RMS: 0.40 secs																
Grid Ref: 189.54 kmE 729.74 kmN Locality: OBAN, ARGYLL & BUTE Velocity model: Lownet Xnear: 100.0 Xfar: 200.0 Comment: FELT OBAN																
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES						
EAB	SZ	71.1	EP	15:43	27.27			-0.01	KBI1	SZ	19.6	EP	05:29	11.29	0.02	
PGB1	HZ	88.5	EP	15:43	29.94			-0.02	STNC	HZ	31.4	EP	05:29	13.23	-0.03	
PGB1	HN	88.5	ES	15:43	40.47			-0.14	STNC	HE	31.4	ES	05:29	18.06	0.22	
PGB1	HE	88.5	AML	15:43	42.71	36	0.56		STNC	HE	31.4	AML	05:29	18.72	101	0.24
PGB1	HN	88.5	AML	15:43	45.47	31	0.36		STNC	HN	31.4	AML	05:29	22.97	75	0.54
KPL	HZ	104.0	EP	15:43	32.43			0.08	LHO	EZ	32.7	EP	05:29	13.21	-0.32	
KPL	HE	104.0	ES	15:43	44.46			-0.29	HPK	HZ	79.6	EP	05:29	21.16	0.12	
KPL	HN	104.0	AML	15:43	48.01	30	0.14		HPK	HE	79.6	ES	05:29	31.40	0.10	
KPL	HE	104.0	AML	15:43	48.05	83	0.32		HPK	HN	79.6	AML	05:29	31.82	29	0.34
KAC	SZ	121.0	EP	15:43	35.44			0.42	HPK	HE	79.6	AML	05:29	33.57	38	0.64
MDO	SZ	131.0	EP	15:43	36.42			-0.08	HLM1	HZ	108.0	EP	05:29	25.66	0.11	
EDI	HE	149.0	AML	15:43	54.58	17	0.46		HLM1	HE	108.0	ES	05:29	38.74	-0.36	
EDI	HN	149.0	AML	15:43	58.39	17	0.40		HLM1	HN	108.0	AML	05:29	43.57	18	0.58
EBL	SZ	164.0	EP	15:43	41.93			0.75	HLM1	HE	108.0	AML	05:29	43.87	8	0.29
GAL1	HZ	178.0	AML	15:44	07.14	13	0.52		WPM1	SZ	139.0	EP	05:29	30.35	0.12	
GAL1	HE	178.0	AML	15:44	07.36	14	0.80		MCH1	HZ	161.0	EP	05:29	33.86	0.55	
MME1	SZ	180.0	EP	15:43	44.33			0.08	MCH1	HN	161.0	ES	05:29	52.42	-0.10	
MVH1	SZ	184.0	EP	15:43	43.21			-0.50	MCH1	HE	161.0	AML	05:29	55.14	16	0.45
MCD	SZ	185.0	EP	15:43	43.21			-0.62	MCH1	HN	161.0	AML	05:29	55.30	16	0.43
December 13 2009 Time: 05:39 54.2 UTC Magnitude: 2.3 ML																
Lat: 56.475N Lon: -5.958W Depth: 11.2 km Grid Ref: 156.28 kmE 738.44 kmN RMS: 0.30 secs																
Locality: ISLE OF MULL Velocity model: Lownet Xnear: 200.0 Xfar: 500.0 Comment: FELT ISLE OF MULL... Intensity: 3																
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES						
KPL	HZ	98.0	IP	C	05:40	10.35										
KPL	HE	98.0	ES													-0.39
KPL	HE	98.0	AML													
KPL	HN	98.0	AML													
EAB	SZ	105.0	EP													0.07
PGB1	HZ	118.0	EP													0.19
PGB1	HE	118.0	ES													-0.09
PGB1	HE	118.0	AML													
PGB1	HN	118.0	AML													
KAC	SZ	121.0	EP													
KAC	SZ	121.0	ES													0.42
MDO	SZ	145.0	EP													0.33
EDI	HN	183.0	AML													
EDI	HE	183.0	AML													
MVH1	SZ	194.0	EP													-0.61
GAL1	HE	196.0	EP													-0.16
GAL1	HE	196.0	AML													
MCD	SZ	205.0	EP													0.43
MCD	SN	205.0	AML													
MCD	SE	205.0	AML													
MCH1	HZ	376.0	EP	01:22	09.93			-0.99	MCH1	SN	205.0	AML	05:40	55.76	28	0.36
MCH1	HE	376.0	ES	01:22	45.60			-3.78	MCH1	HE	215.0	EP	05:40	58.61	27	0.26
MCH1	HE	376.0	AML	01:23	00.49	5	0.30		ESK	HN	215.0	AML	05:40	25.84	-0.30	
MCH1	HN	376.0	AML	01:23	08.02	7	0.70		ESK	HE	215.0	AML	05:40	55.48	21	0.46
December 2 2009 Time: 17:52 59.2 UTC Magnitude: 2.1 ML																
Lat: 51.697N Lon: -3.237W Depth: 8.5 km Grid Ref: 314.52 kmE 200.58 kmN RMS: 0.30 secs																
Locality: BARGOED, CAERPHILLY Velocity model: Mid Wales Xnear: 100.0 Xfar: 200.0 Comment: FELT GROSMONT... Intensity: 3																
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES						
MONM	HZ	33.8	EP	17:53	05.25			0.04	STNC	BZ	42.3	EP	23:20	58.90	-0.03	
MONM	HN	33.8	ES	17:53	09.94			0.43	STNC	BE	42.3	ES	23:21	03.87	-0.54	
MONM	HN	33.8	AML	17:53	10.66	231	0.18		HLM1	HZ	56.0	IP	23:21	01.01	-0.11	
MONM	HE	33.8	AML	17:53	11.34	192	0.68		HLM1	HN	56.0	ES	23:21	07.60	-0.60	
MCH1	HZ	37.2	EP	17:53	05.54			-0.24	HLM1	HE	56.0	AML	23:21	07.84	61	0.22
MCH1	HE	37.2	ES	17:53	10.55			0.05	HLM1	HN	56.0	AML	23:21	07.93	105	0.20
MCH1	HN	37.2	AML	17:53	10.95	103	0.20		FOEL	HZ	62.4	EP	23:21	02.19	0.07	
OLDB	HZ	47.7	EP	17:53	07.37			-0.11	FOEL	HE	62.4	ES	23:21	09.52	-0.42	
OLDB	HE	47.7	ES	17:53	13.59			0.17	FOEL	HN	62.4	AML	23:21	10.46	82	0.18
OLDB	HN	47.7	AML	17:53	14.10	500	0.28		FOEL	HE	62.4	AML	23:21	10.51	55	0.41
OLDB	HE	47.7	AML	17:53	14.26	287	0.40		MCH1	HZ	65.9	IP	23:21	02.10	-0.52	
BATH	HZ	69.1	EP	17:53	10.81			-0.20	MCH1	HN	65.9	ES	23:21	09.78	-0.50	
BATH	HN	69.1	ES	17:53	19.12			-0.37	MCH1	HE	65.9	AML	23:21	10.17	522	0.14
BATH	HN	69.1	AML	17:53	24.88	106	0.86		MONM	HE	87.8	ES	23:21	10.18	396	0.16
BATH	HE	69.1	AML	17:53	28.85	85	0.56		MONM	HN	87.8	AML	23:21	17.35	93	0.38
LPW	BZ	73.6	EP	17:53	11.76			0.01	YRE	SZ	80.6	EP	23:21	05.29	0.40	
STRD	HZ	74.7	EP	17:53	12.21			0.27	YRE	HN	87.8	IP	23:21	05.90	-0.02	
STRD	HE	74.7	ES	17:53	20.85			-0.23	YLL	SZ	87.3	EP	23:21	05.90	-0.04	
STRD	HN	74.7	AML	17:53	28.08	183	0.46		MONM	HN	87.8	IP	23:21	05.96	-0.35	
STRD	HE	74.7	AML	17:53	29.94	95	1.10		MONM	HE	87.8	ES	23:21	16.30	-0.35	
HLM1	HZ	94.6	EP	17:53	14.69			-0.50	MONM	HE	87.8	AML	23:21	16.91	183	0.24
HLM1	HE	94.6	ES	17:53	26.50			-0.19	MONM	HE	87.8	AML	23:21	17.35	93	0.38
HLM1	HN															

TABLE 2 : PHASE DATA

STNC	HE	125.0	ES	23:21	27.46	0.75	December 21 2009	Time: 00:07 21.0 UTC	Magnitude: 1.3 ML	
STNC	HN	125.0	AML	23:21	27.83	83 0.26	Lat: 56.126N	Lon: -3.910W	Depth: 9.2 km	
STNC	HE	125.0	AML	23:21	29.25	91 0.30	Grid Ref: 281.29 kmE 694.22 kmN	RMS: 0.20 secs		
STRD	HZ	126.0	EP	23:21	12.11	0.16	Locality: CAMBUSKENNETH, STIRLING			
SSW	EZ	135.0	IP	4 C	23:21	33.05	19.81	Velocity model: Lownet Xnear: 75.0 Xfar: 150.0		
BATH	HZ	143.0	EP	23:21	15.14	0.83	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES			
BATH	HE	143.0	ES	23:21	31.37	0.35	EAB SZ 27.5 EP 00:07 25.90 -0.32			
BATH	HN	143.0	AML	23:21	32.63	102 0.40	PGB1 HZ 50.1 EP 00:07 29.90 0.25			
BATH	HE	143.0	AML	23:21	36.78	160 0.46	PGB1 HE 50.1 ES 00:07 35.91 -0.09			
HEX	SZ	150.0	EP	23:21	15.95	0.58	EDI HZ 50.4 EP 9 00:07 21.44 -8.24			
SWN1	HZ	164.0	EP	23:21	18.61	1.29	EDI HN 50.4 ES 9 00:07 27.30 -0.50			
SWN1	HN	164.0	ES	23:21	38.08	1.85	EDI HN 50.4 AML 00:07 27.39 72 0.64			
SWN1	HN	164.0	AML	23:21	39.13	71 0.37	EDI HE 50.4 AML 00:07 27.82 19 0.19			
SWN1	HE	164.0	AML	23:21	39.70	68 0.41	EBL SZ 66.9 EP 00:07 32.25 -0.03			
HTL	HZ	167.0	EP	23:21	18.79	1.00	ESY SZ 84.0 EP 00:07 35.27 0.35			
HTL	HE	167.0	ES	23:21	37.45	0.40	ESK HZ 100.0 EP 00:07 37.52 0.11			
HTL	HN	167.0	AML	23:21	38.93	48 0.28	ESK HE 100.0 ES 00:07 49.29 -0.14			
HTL	HE	167.0	AML	23:21	39.77	28 0.23	ESK HE 100.0 AML 00:07 52.29 4 0.38			
KBII	SZ	173.0	EP	23:21	18.75	0.17	ESK HN 100.0 AML 00:07 52.48 6 0.30			
LHO	EZ	176.0	EP	23:21	18.96	-0.05	DRUM HZ 124.0 EP 00:07 40.29 -0.46			
DSB	BN	204.0	ES	23:21	45.15	0.22	DRUM HN 124.0 ES 00:07 55.16 -0.04			
DSB	BN	204.0	AML	23:21	47.03	18 0.37	DRUM HE 124.0 AML 00:07 58.59 13 0.40			
DSB	BE	204.0	AML	23:21	47.88	15 0.27	DRUM HN 124.0 AML 00:07 59.34 13 0.48			
HPK	HE	220.0	ES	23:21	48.23	-0.41				
HPK	HN	220.0	AML	23:21	53.99	78 0.23				
HPK	HE	220.0	AML	23:21	54.49	62 0.39				
DYA	HZ	221.0	EP	23:21	24.38	-0.16	December 24 2009 Time: 15:45 58.6 UTC Magnitude: 2.1 ML			
DYA	HE	221.0	ES	23:21	48.74	0.02	Lat: 56.143N Lon: -3.911W Depth: 11.1 km			
DYA	HN	221.0	AML	23:21	51.87	16 0.20	Grid Ref: 281.28 kmE 696.11 kmN RMS: 0.20 secs			
DYA	HE	221.0	AML	23:21	56.35	22 0.60	Locality: CAMBUSKENNETH, STIRLING			
							Velocity model: Lownet Xnear: 75.0 Xfar: 150.0			
December 15 2009										
Lat: 51.709N										
Lon: -4.085W										
Grid Ref: 255.96 kmE										
203.25 kmN										
Locality: LLANELL, CARMARTHENSHIRE										
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0										
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES										
LPW	BZ	45.1	EP	15:25	34.24	0.14	PGB1 HN 51.3 AML 15:46 05.78 131 0.50			
LPW	BE	45.1	ES	15:25	39.88	0.05	EDI HE 51.3 AML 15:46 05.79 122 0.50			
MCH1	HZ	81.4	EP	15:25	39.37	-0.40	PGB1 HZ 51.4 EP 15:46 07.53 -0.04			
MCH1	HE	81.4	ES	15:25	49.18	-0.45	EDI HN 51.4 AML 15:46 14.06 -0.03			
MCH1	HE	81.4	AML	15:25	49.72	21 0.17	PGB1 HN 51.4 ES 15:46 14.51 147 0.48			
MCH1	HN	81.4	AML	15:25	49.83	23 0.13	PGB1 HE 51.4 AML 15:46 15.40 97 0.46			
HTL	HZ	84.2	EP	15:25	40.36	0.19	ESY SZ 84.7 EP 15:46 12.88 0.16			
HTL	HE	84.2	ES	15:25	50.08	-0.25	ESK HZ 102.0 EP 15:46 15.56 0.32			
HTL	HE	84.2	AML	15:25	52.54	23 0.16	ESK HE 102.0 ES 15:46 27.27 -0.08			
HTL	HN	84.2	AML	15:25	52.64	34 0.13	ESK HE 102.0 AML 15:46 30.17 28 0.16			
MONM	HZ	89.6	EP	15:25	41.20	0.19	DRUM HZ 123.0 EP 15:46 18.37 0.23			
MONM	HE	89.6	ES	15:25	52.05	0.27	DRUM HN 123.0 AML 15:46 31.77 25 0.10			
MONM	HE	89.6	AML	15:25	52.70	25 0.14	DRUM HE 123.0 ES 15:46 31.82 -0.56			
MONM	HN	89.6	AML	15:25	53.11	22 0.24	MDO SZ 147.0 EP 15:46 23.56 1.87			
OLDB	HZ	106.0	EP	15:25	43.84	0.27	GAL1 HZ 151.0 EP 15:46 22.87 0.71			
HLM1	HZ	122.0	EP	15:25	46.01	-0.08	GAL1 HE 151.0 ES 15:46 40.77 1.43			
HLM1	HN	122.0	ES	15:26	0.20	GAL1 HN 151.0 AML 15:46 41.90 56 0.30				
STRD	HZ	133.0	EP	15:25	47.81	0.22	GAL1 HE 151.0 ES 15:46 42.27 68 0.60			
STRD	HN	133.0	ES	15:25	03.54	0.37	MCD SZ 165.0 EP 15:46 25.08 1.01			
DYA	HZ	142.0	EP	15:25	48.68	-0.23	MCD SE 165.0 AML 15:46 48.94 31 0.94			
DYA	HE	142.0	AML	15:26	05.89	14 0.34	MCD SN 165.0 AML 15:46 49.25 49 0.46			
DYA	HN	142.0	AML	15:26	07.10	11 0.12				
YRE	SZ	143.0	EP	15:25	49.13	0.04	December 24 2009 Time: 16:12 42.9 UTC Magnitude: 2.1 ML			
FOEL	HZ	145.0	EP	15:25	49.60	0.30	Lat: 53.017N Lon: -2.175W Depth: 0.5 km			
FOEL	HN	145.0	AML	15:26	08.04	10 0.39	Grid Ref: 388.26 kmE 346.68 kmN RMS: 0.30 secs			
FOEL	HE	145.0	AML	15:26	08.33	4 0.36	Locality: STOKE-ON-TRENT, STAFFS			
WPM1	SZ	173.0	EP	15:25	53.42	0.23	Velocity model: Lownet Xnear: 125.0 Xfar: 250.0			
							Comment: FELT STOKE Intensity: 3			
December 17 2009							STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES			
Lat: 53.045N							STNC HZ 8.5 EP 16:12 44.92 -0.16			
Lon: -2.965W							STNC HN 8.5 ES 16:12 46.49 -0.15			
Grid Ref: 335.31 kmE							STNC HN 8.5 AML 16:12 46.80 2349 0.22			
350.22 kmN							STNC HE 8.5 AML 16:12 47.13 3003 0.37			
Locality: WREXHAM, WREXHAM							KBII SZ 50.7 IP C 16:12 52.36 -0.05			
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0							FOEL HZ 70.3 IP C 16:12 55.65 0.14			
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES							FOEL HE 70.3 ES 16:13 04.64 -0.04			
FOEL	HZ	23.4	IP	C	15:26	21.29	0.23	FOEL HE 70.3 AML 16:13 12.13 22 0.43		
FOEL	HE	23.4	ES		15:26	24.42	0.03	HLM1 HZ 73.1 EP 16:12 55.80 -0.14		
FOEL	HE	23.4	AML		15:26	25.52	76 0.28	HLM1 HE 73.1 ES 16:13 05.50 0.08		
FOEL	HN	23.4	AML		15:26	26.00	166 0.28	HLM1 HE 73.1 AML 16:13 08.74 32 0.35		
HLM1	HZ	58.9	IP	D	15:26	26.55	-0.01	HLM1 HE 73.1 AML 16:13 11.32 25 0.25		
HLM1	HN	58.9	ES		15:26	33.55	-0.34	HPK HZ 111.0 EP 16:13 02.50 0.75		
HLM1	HN	58.9	AML		15:26	34.02	104 0.14	HPK HE 111.0 ES 16:13 15.15 -0.34		
HLM1	HE	58.9	AML		15:26	34.19	126 0.20	HPK HE 111.0 AML 16:13 18.68 119 0.24		
WPM1	SZ	67.2	IP	D	15:26	27.89	0.06	HPK HE 111.0 AML 16:13 19.58 110 0.11		
YLL	SZ	81.4	EP		15:26	30.16	0.16	MONM HZ 138.0 IP C 16:13 06.24 0.37		
WME	SZ	97.6	EP		15:26	32.75	0.25	MONM HN 138.0 ES 16:13 22.75 0.14		
YRE	SZ	98.3	IP	C	15:26	32.76	0.14	MONM HN 138.0 AML 16:13 26.26 79 0.43		
KBII	SZ	98.9	EP		15:26	32.81	0.07	MONM HE 138.0 AML 16:13 26.51 110 0.29		
WLF1	HZ	99.5	EP		15:26	32.81	0.02			
WLF1	HN	99.5	ES		15:26	44.04	-0.63	YRE SZ 151.0 EP 16:13 08.16 0.38		
WLF1	HN	99.5	AML		15:26	44.94	45 0.40	YRE HE 151.0 EP 16:13 10.00 0.55		
WLF1	HE	99.5	AML		15:26	44.98	31 0.26	LPW BZ 163.0 EP 16:13 11.11 -0.11		
YRC	SZ	110.0	EP		15:26	34.39	-0.04			
MCH1	HZ	117.0	EP		15:26	35.19	-0.27			
MCH1	HN	117.0	ES		15:26	48.71	-0.59			
MCH1	HE	117.0	AML		15:26	52.33	23 0.10			
MCH1	HN	117.0	AML		15:26	52.45	28 0.36			
LPW	BZ	128.0	EP		15:26	37.24	0.13			
LPW	BN	128.0	ES		15:26	52.51	0.35			
HPK	HZ	135.0	EP		15:26	38.15	-0.04			
HPK	HE	135.0	ES		15:26	53.60	-0.42			
HPK	HN	135.0	AML		15:26	54.94	116 0.18			
HPK	HE	135.0	AML		15:26	55.57	102 0.18			
MONM	HZ	135.0	EP		15:26	38.61	0.51			
MONM	HE	135.0	ES		15:26	54.41	0.54			
MONM	HN	135.0	AML		15:26	55.64	37 0.52			
MONM	HE	135.0	AML		15:26	56.30	33 0.40			
STRD	HZ	151.0	EP		15:26	41.13	0.62			
KESW	HN	172.0	AML		15:27	05.15	21 0.34			
KESW	HE	172.0	AML		15:27	05.26	18 0.48			
							December 25 2009 Time: 09:00 09.8 UTC Magnitude: 1.7 ML			
							Lat: 53.010N Lon: -2.167W Depth: 0.9 km			
							Grid Ref: 388.80 kmE 345.90 kmN RMS: 0.40 secs			
							Locality: STOKE-ON-TRENT, STAFFS			
							Velocity model: Lownet Xnear: 125.0 Xfar: 250.0			
							STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES			
							STNC HZ 9.4 EP 09:00 11.43 -0.56			
							STNC HE			

TABLE 2 : PHASE DATA

TABLE 3

GEOGRAPHIC COORDINATES OF SEISMOGRAPH STATIONS, 2009

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
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
KAR1	ARISAIG	56.9188	-5.8290	166.98	787.34	186	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
KSB	SHIEL BRIDGE	57.2099	-5.4214	193.40	818.40	417	1R

TABLE 3

GEOGRAPHIC COORDINATES OF SEISMOGRAPH STATIONS, 2009

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

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.