

# Bulletin of British Earthquakes 2008

D D Galloway (Editor)

*Contributors:* J Bukits and G D Ford



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# 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 2008, listed in Tables 1 and 2. Maps showing seismic activity in 2008 (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 a number of sub-networks, which, in turn, consist of up to ten 'outstation' vertical seismometers radio-linked over distances of up to 100 km to a central site. Here, the data, along with that from a local 3-component set of two horizontal and one vertical seismometer, are recorded digitally by SDAS or the SEISLOG data acquisition system (Utheim and Havskov, 1993). The system records data continuously, but also creates event-triggered files. The sub-networks are accessed for data transfer to Edinburgh several times a day through Internet or dial-up modems. Once transferred, the events are analysed to determine location and magnitude. At a number of sites, low-gain vertical seismometers are installed to extend the dynamic range of the system (by 34 dB) to stronger motions, and low frequency microphones are used to aid the discrimination of sonic booms. In addition, strong motion accelerometers have been installed at locations throughout the country and record accelerations up to 0.1g. At present the seismic network is undergoing an upgrade with the installation of broadband seismometers that record with a larger dynamic range and over a wider frequency band. In 2008, 23 broadband stations were operated by the BGS. Data from these stations together with some short-period data are transmitted and processed at the central recording site in Edinburgh in real time. Operational seismograph stations in December 2008 are shown in Figure 2.

The detection capabilities of a network depend upon station distribution, instrument sensitivity and background noise levels. Figure 3 shows the magnitude detection thresholds for the

seismograph stations operational in December 2008. 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 4 shows only earthquakes with magnitude 2.5 ML or greater, in the period 1979 to 2008. The data set is considered complete for these magnitudes in all localities onshore. Seismicity for the period 1970 to 2008 is shown in Figure 5 with a threshold magnitude of 3.5 ML. This is the period covered by BGS instrumentation that, in the early years, only consisted of the network around Edinburgh (LOWNET) and Eskdalemuir (ESK) and a station near Kyle of Lochalsh (KYL). The data set is likely to be complete for such magnitudes.

### 3 Earthquake Parameters and Their Errors

#### HYPOCENTRE LOCATION

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

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

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

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

## MAGNITUDE

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

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

Where A is the maximum deflection (centre to peak in mm) registered on a Wood-Anderson seismograph and  $A_0$  is that for a 'standard' magnitude zero earthquake at the same distance. The  $A_0$  term is thus a distance correction factor, tabulated by Richter to 200 km, and later adjusted to include up to 600 km. Although Richter intended his method to be an approximate quantification of earthquake size and his attenuation term,  $A_0$ , strictly only applies to California, the formula is still used worldwide today. The ML magnitudes in this bulletin have been calculated according to Richter's formula after converting the output of the BGS instruments to an equivalent Wood-Anderson deflection. Ideally, the measurements are made on two horizontal instruments and averaged but, if this is not possible, the mean of the magnitudes from a number of verticals are used. Ground motion registered at a seismograph varies with site conditions, distance and direction from the earthquake, and the nature of the ray path. Consequently, it is important to take the mean from a good distribution of stations. The resulting errors on magnitudes quoted in the bulletin will normally be less than 0.4 ML.

## INTENSITY

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

## 4 Summary of 2008 Seismicity

There were 102 earthquakes located by the BGS seismic monitoring network during the year, with 28 having magnitudes of 2.0 ML or greater, five having magnitudes of 3.0 ML or greater and one with a magnitude of 4.0 ML or greater. Seven events with a magnitude of 2.0 ML or greater were reported felt, together with a further four smaller ones, bringing the total to eleven felt earthquakes in 2008.

The largest onshore earthquake of the year with a magnitude of 5.2 ML occurred near Market Rasen, Lincolnshire on 27 February at 00:56 UTC, at a depth of about 18 km (Figure 6). Data from over 30,000 questionnaires, collected online, were used to determine how widely the earthquake had been felt, with the most distant reports coming from Aberdeen, Truro, Ireland and Liege, Belgium. The results (Figure 7) show isolated values of 6 EMS at 59 locations, widely scattered over England in an area roughly between York and Nottingham, and east of Manchester. BGS also received reports of damage to chimneys and masonry over a widespread area. This earthquake was followed by 11 aftershocks with magnitudes between 0.6 and 2.8 ML. The magnitude of the earthquake, makes it the largest earthquake in the UK since a magnitude 5.4 ML earthquake struck North Wales in 1984. The best-fitting fault plane solution (Figure 8), computed from inversion of regional data, shows predominantly strike-slip faulting on a near vertical fault, striking either east west or north south, which is consistent with maximum compression in NW-SE direction (Ottemoller et al, 2009).

The largest offshore earthquake occurred in the Norwegian Sea on 14 October, with a magnitude of 3.9 ML. It was located approximately 275 km northeast of Lerwick, Shetland Islands (Figure 9). On 9 January an earthquake with a magnitude of 3.1 ML occurred in the northern North Sea

region, approximately 220 km northeast of Aberdeen. A further 5 events occurred in the North Sea and adjacent waters during the year, with magnitudes ranging between 2.2 and 2.8 ML.

Between 23 June and 16 December, ten events were recorded, with magnitudes ranging between 0.9 and 2.5 ML, in the Moray Firth. The epicentres of these events were approximately 30 km east of the village of Helmsdale in the county of Sutherland, Highland, Scotland.

An earthquake with a magnitude of 2.0 ML and at a depth of 4 km occurred on 27 January, with a location near Loch Morar, Highland. The BGS received a single report from a resident in Lochailort describing “I thought it was a thunderclap, it shook the whole house from the ground up and sounded like the chimney had fallen down”. It locates in the same region as a magnitude 2.8 ML earthquake which occurred on 19 January 2006 and was also felt with similar intensities of around 3-4 EMS.

On 21 February, an earthquake with a magnitude of 2.4 ML was detected 3 km northwest of the town of Buncrana in County Donegal, Ireland. The BGS received information from the local Media that it was felt by scores of people in Donegal in an area stretching from the Inishowen peninsula westwards to Kerrykeel and Downings. Reports described “houses shaking” and “windows rattling for a second or two”. An intensity of 3 EMS was assigned to the earthquake.

A magnitude 1.6 ML earthquake occurred on 23 July, with an epicentre approximately 13 km southeast of Caernarvon, Gwynedd. The BGS received several reports from residents in Penygroes, Bangor, Groeslon, Beddgelert, Llanberis and Dyffryn Ardudwy, Gwynedd that described “a roaring noise, immediately followed by the house shaking and the windows rattling” indicating an intensity of at least 3 EMS.

Between 24 and 28 May, four earthquakes were detected in the Penrith area with magnitudes ranging between 1.0 and 2.5 ML. None were reported felt. The epicentres of these earthquakes are approximately 13 km WNW of Penrith, 35 km SSE of Chapelcross and 50 km northeast of Sellafield. The larger event (magnitude 2.5 ML) is the largest in the region since a similar magnitude 2.6 ML earthquake, near Calthwaite, on 24 April 2000, which was felt with intensities of around 3-4 EMS.

On 9 August, a magnitude 1.8 ML earthquake occurred near Tarbert, Argyll and Bute. The BGS received several reports from residents in Tarbert, Lochgilphead and West Loch, describing “the house shook”, “various objects rattled” and “that it was the talk of the local hotel”. An intensity of 3 EMS was assigned to the earthquake.

An earthquake with a magnitude of 3.5 ML occurred at 04:28 UTC on 10 October, with a location approximately 6 km southwest of Glenfinnan, Highland (Figure 10). The BGS received over 200 reports from residents in villages such as Glenfinnan, Fort William, Ardgour, Strontian and Drumnadrochit, which described “it felt like a train rumbling past”, “all my dogs went mad and started barking and growling” and “a loud bang that shook the whole house and rattled all the windows”, indicating an intensity of at least 4 EMS. Most reports received also indicated that people were woken from their sleep. The epicentre is approximately 17 km SSE of the magnitude 2.0 ML Loch Morar earthquake on 27 January 2008 and 13 km WNW of the magnitude 3.0 ML Fort William earthquake on 10 December 2005.

On 26 October, a magnitude 3.5 ML earthquake occurred near Bromyard, Herefordshire. Data from over 400 questionnaires, collected online, were used to determine the felt area, with the most distant reports coming from Cardiff, to the south, Burton upon Trent, to the north, Milton Keynes, to the east and Brecon, to the west. Felt reports described “a thump as if someone had jumped off the bed upstairs” and “a loud boom noise as though something extremely heavy had fallen on the wooden floor above my head”. The strength of the shaking has been described as moderate, enough to make furniture shake and windows and crockery rattle. Some reports indicate that people were woken from sleep and a few were frightened, indicating an intensity of at least 4 EMS. The epicentre is approximately 17 km southeast of a magnitude 2.4 ML event which occurred on 17 September 1993. Historically, the largest event to have occurred in this

area was the magnitude 5.3 ML Hereford earthquake on 17 December 1896, which was felt throughout most of England and Wales. Significant damage was caused in Hereford and surrounding villages, where over 200 chimneys were damaged or twisted.

A magnitude 2.5 ML earthquake occurred on 3 November, with an epicentre about 6 km southwest of Oban, Argyll & Bute. The BGS received a few reports from residents of Oban and from Croggan, on the eastern side of Mull, describing, “felt like a lorry crashing in to the side of the house” and “all the windows started rattling”. It locates approximately 11 km northeast of the magnitude 4.1 ML Oban earthquake of 29 September 1986 which was felt over an area of around 30,000 km<sup>2</sup> with a maximum intensity of 5 EMS.

The BGS received reports of another two earthquakes being felt during the year. They occurred on 12 August, near Warrington, Cheshire and on 18 September, near Bridgwater, Somerset, with magnitudes of 1.4 ML and 1.2 ML, respectively.

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NORSAR (Oslo, Norway)

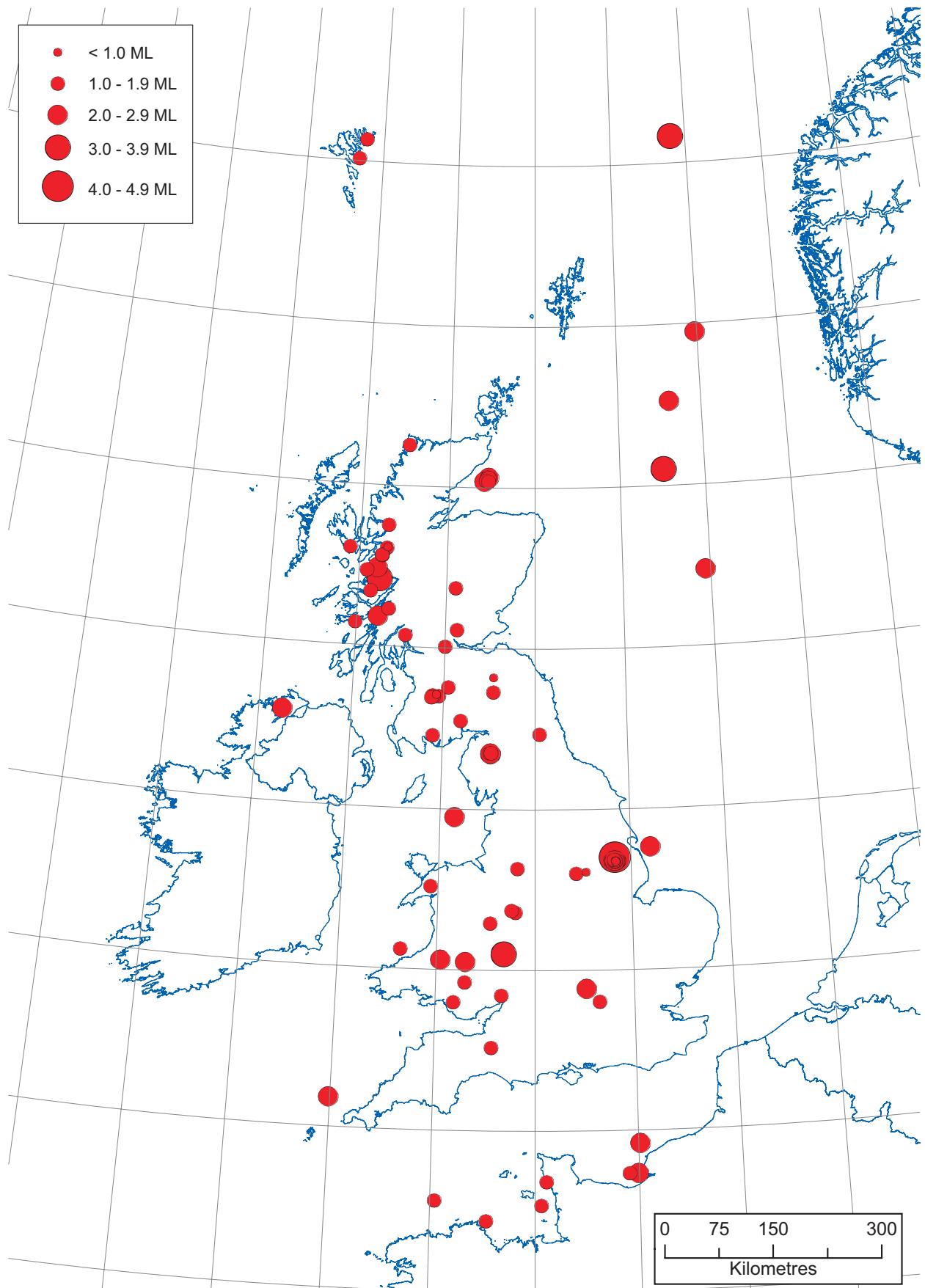
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University of Keele (Keele, UK)

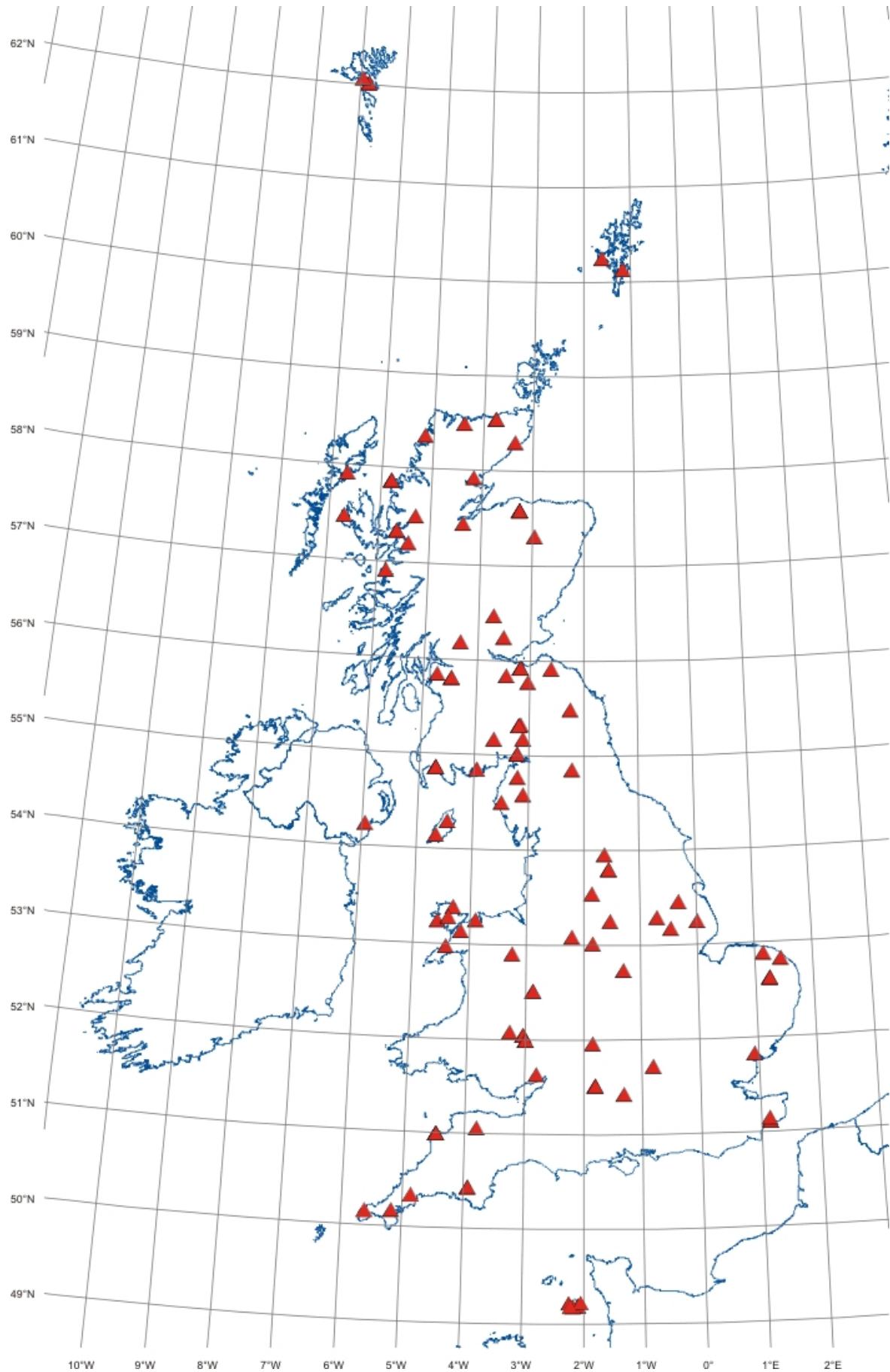
This report is published with the approval of the Director of the British Geological Survey (NERC).

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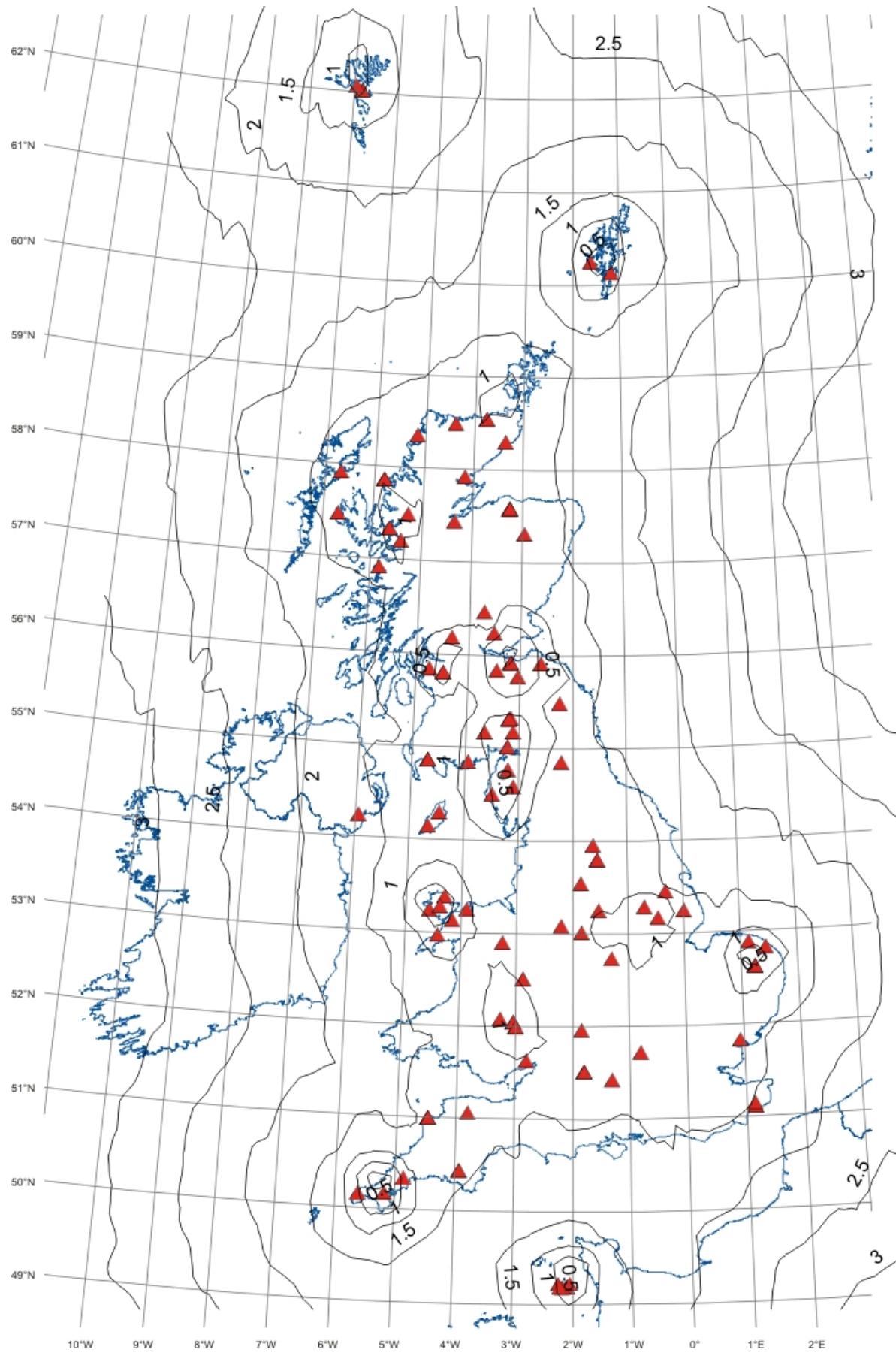
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**Figure 1. Epicentre map of earthquakes in 2008 as listed in Table 1.**



**Figure 2. Seismograph network operational during 2008.**



**Figure3. Earthquake detection capability during 2008. Contour values are for 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.**

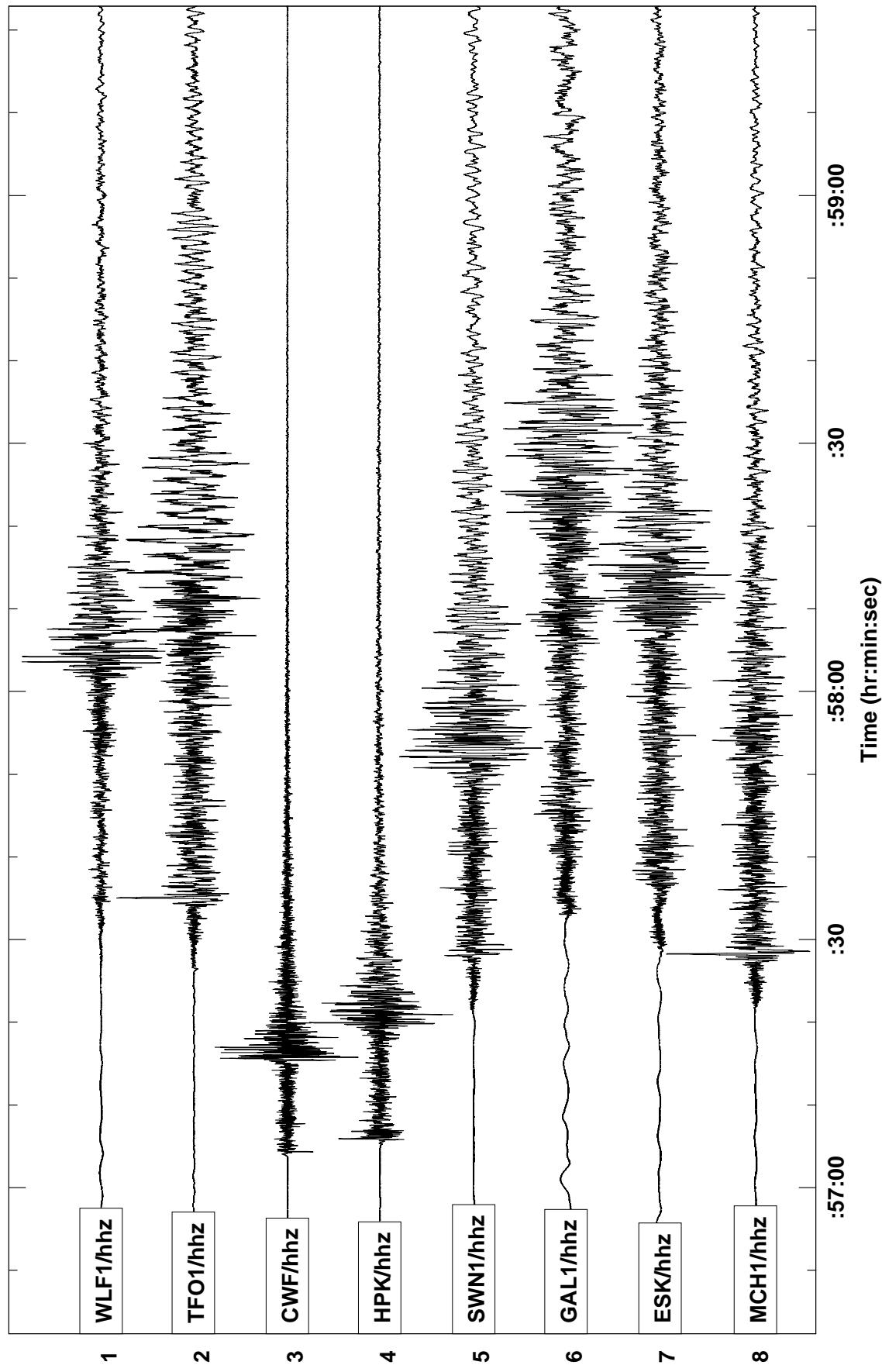


**Figure 4. Epicentres of earthquakes with magnitudes of 2.5 ML and above, in the period 1979 to 2008.**

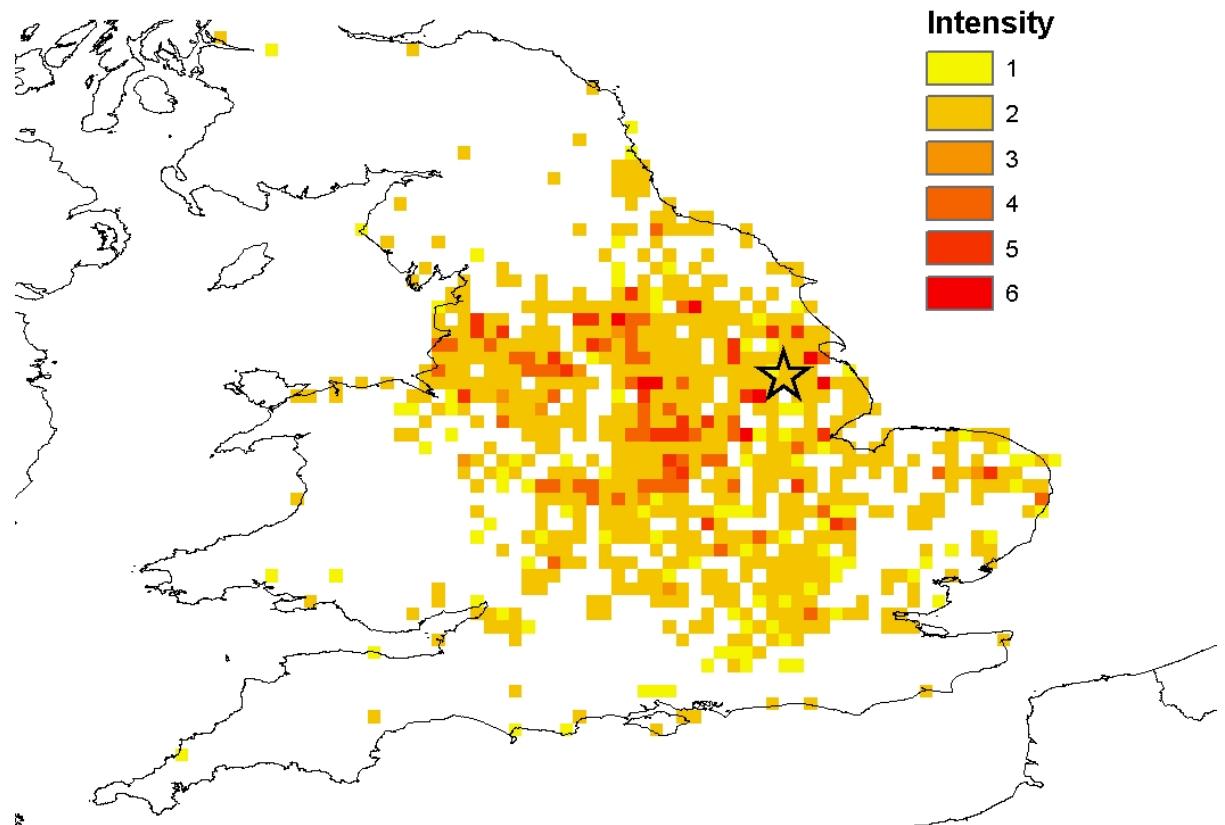


**Figure 5. Epicentres of earthquakes with magnitudes of 3.5 ML and above, in the period 1970 - 2008.**

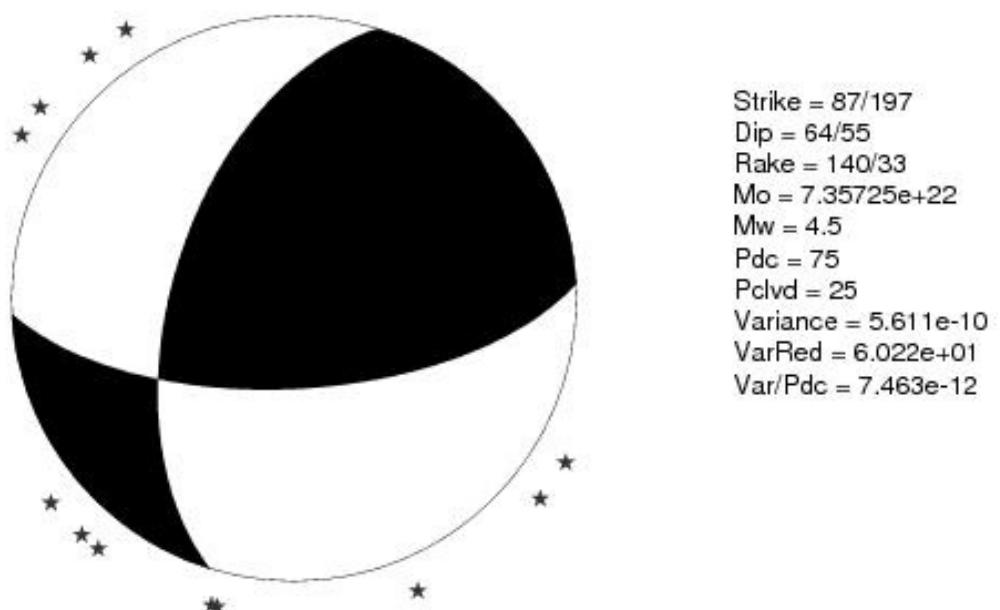
**MARKET RASEN, LINCOLNSHIRE 27 FEBRUARY 2008 00:56 UTC 5.2 ML**



**Figure 6. Seismograms of the ground displacement from the Market Rasen, Lincolnshire earthquake, 27 February 2008, recorded by BGS seismograph stations.**



**Figure 7.** Isoseismal map for the Market Rasen, Lincolnshire earthquake.



**Figure 8.** Focal mechanism for the Market Rasen, Lincolnshire earthquake.

NORWEGIAN SEA 14 OCTOBER 2008 02:23 UTC 3.9 ML

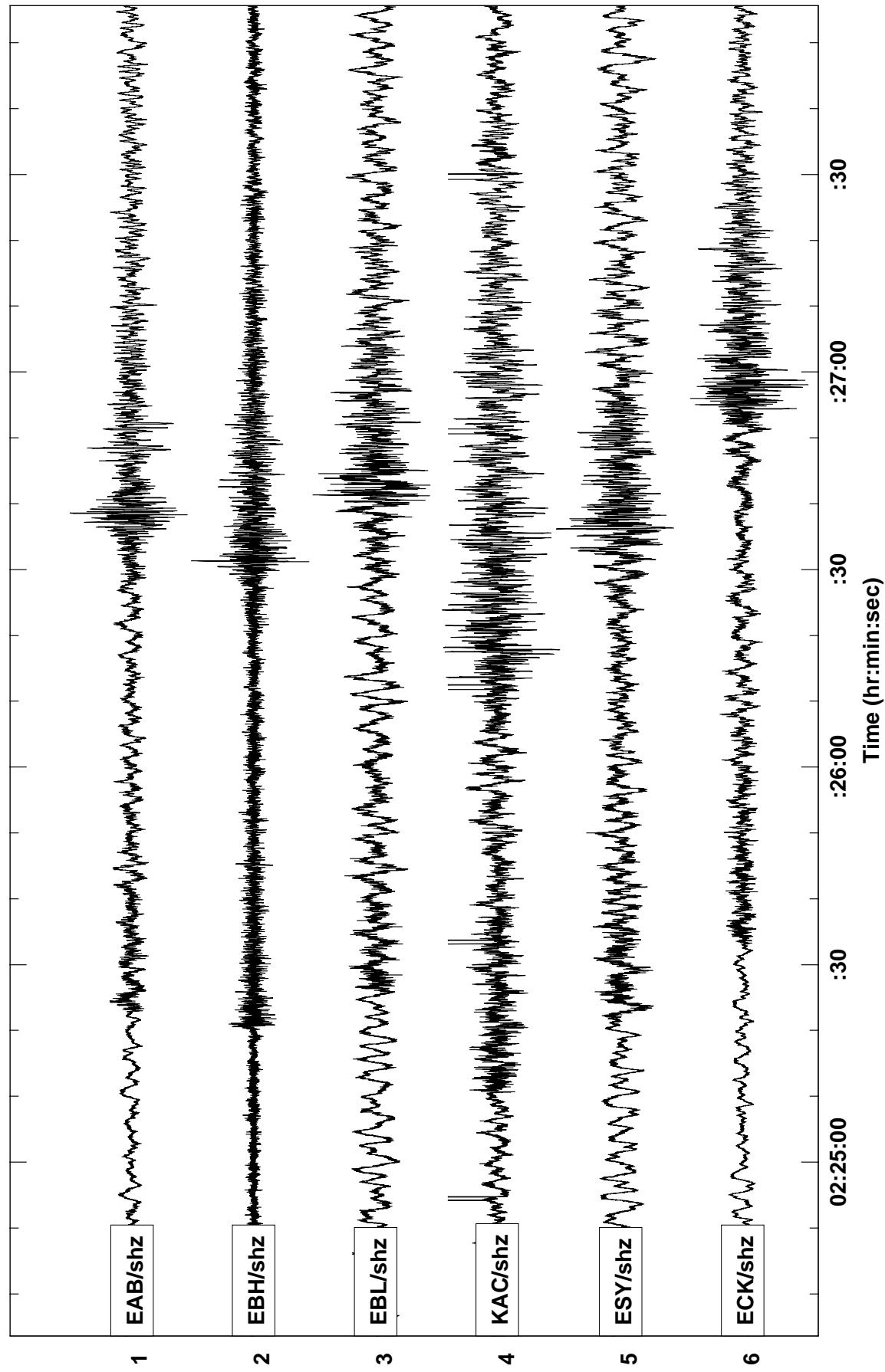


Figure 9. Seismograms of the ground displacement from the Norwegian Sea earthquake, 14 October 2008, recorded by BGS seismograph stations.

GLENFINNAN, HIGHLAND 10 OCTOBER 2008 04:28 UTC 3.5 ML

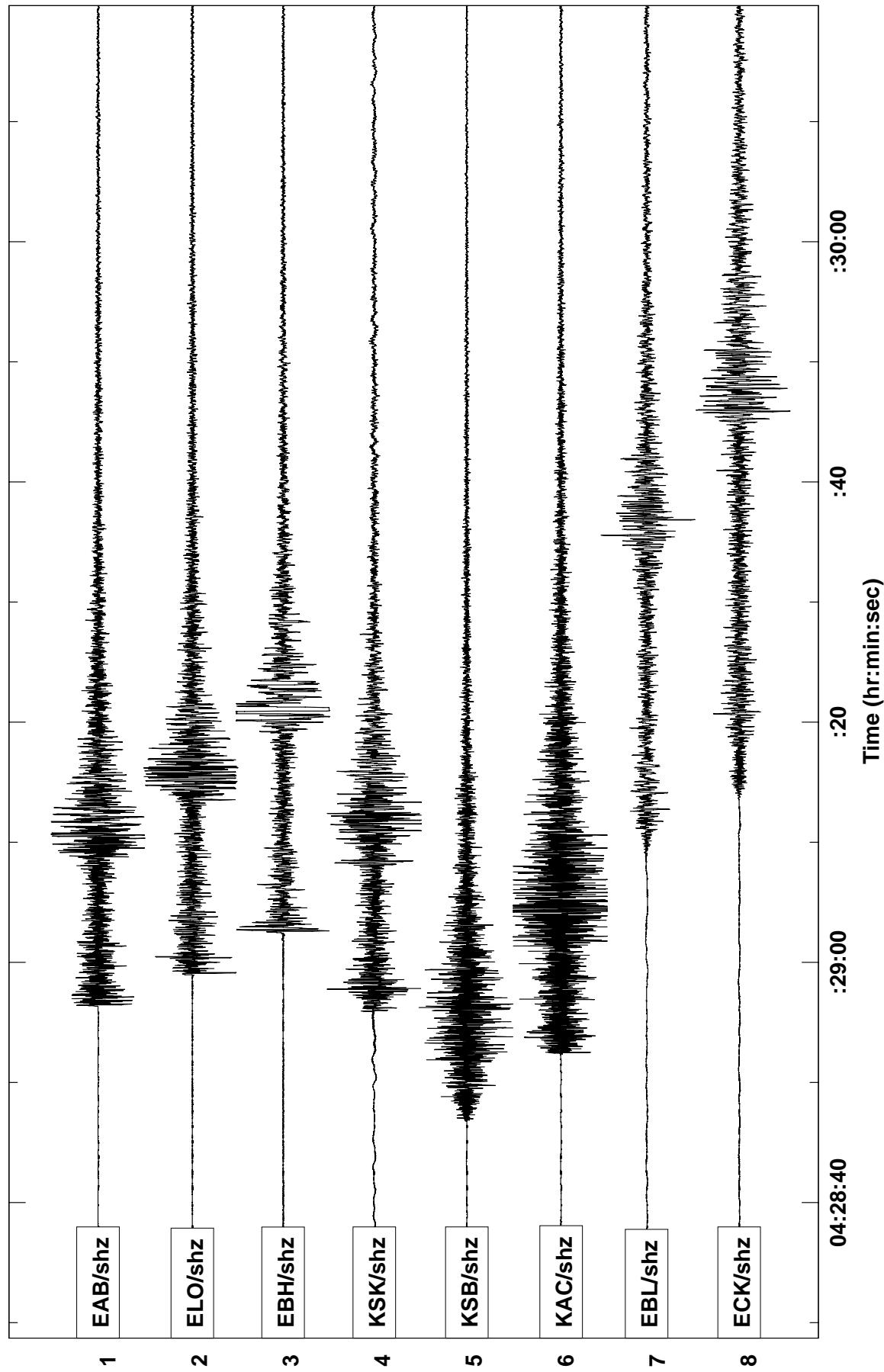
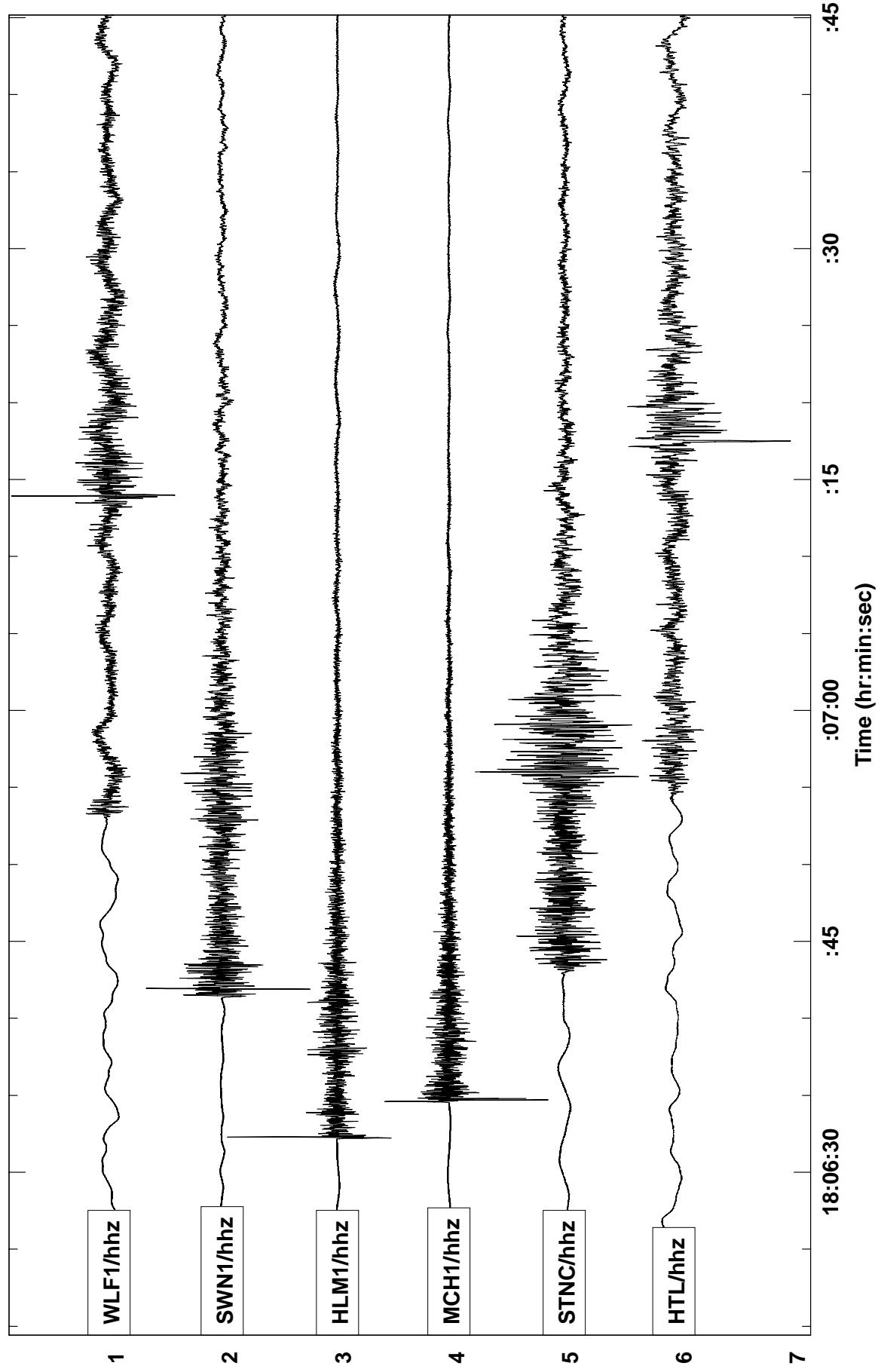


Figure 10. Seismograms of the ground displacement from the Glenfinnan, Highland earthquake, 10 October 2008, recorded by BGS seismograph stations.

BROMYARD, HEREFORDSHIRE 26 OCTOBER 2008 18:06 UTC 3.5 ML



**Figure 11. Seismograms of the ground displacement from the Bromyard, Herefordshire earthquake, 26 October 2008, recorded by BGS seismograph stations.**

**TABLE 1 : CATALOGUE OF EVENTS : 2008**

YearMoDy	HrMnSecs	Lat	Lon	kmE	kmN	Dep	Mag	Locality	Int No	Gap	RMS	ERH	ERZ	Comments	
20080108	145218.9	54.94	-1.90	406.5	560.0	2.7	1.4	PRUDHOE, NORTHUMBERLAND	5	268	0.50	4.91	5.50	5KM SW OF PRUDHOE	
20080109	223904.6	58.20	1.03	578.1	927.9	20.2	3.1	NORTHERN NORTH SEA	21	157	0.50	8.96	9.30	220KM NE OF ABERDEEN	
20080112	133800.8	49.07	-1.87	409.3	-91.9	6.2	1.1	ENGLISH CHANNEL	5	341	0.00	5.47	3.20	20KM SE OF JERSEY	
20080112	230054.2	52.59	-2.92	338.0	299.0	11.3	1.6	SHREWSBURY, SHROPSHIRE	14	91	0.30	2.88	4.10	17KM SW OF SHREWSBURY	
20080113	082314.9	56.68	-5.72	172.4	760.3	9.0	1.6	STRONTIAN, HIGHLAND	9	204	0.30	3.15	9.50	FELT SHREWSBURY	
20080114	160000.0							SONIC SHREWSBURY	2					FELT SHREWSBURY	
20080117	043652.7	51.68	-2.67	353.4	198.6	18.8	1.7	CHEPSTOW, MONMOUTHSHIRE	10	101	0.30	3.24	2.60	5KM N OF CHEPSTOW	
20080127	132102.7	56.98	-5.58	182.2	792.8	4.0	2.0	LOCH MORAR, HIGHLAND	3	16	96	0.30	5.09	6.50	FELT LOCHAILORT
20080130	132508.0	52.24	-4.74	213.0	264.3	4.8	1.2	CARDIGAN BAY	7	193	0.10	3.27	4.30	30KM E OF ABERAERON	
20080205	235754.7	51.77	-0.96	471.6	208.4	21.5	2.0	AYLESBURY, BUCKS	8	128	0.50	3.67	2.30	10KM SW OF AYLESBURY	
20080212	103800.0							SONIC-DEVON	3	1				FELT SOUTH DEVON	
20080212	133852.1	56.94	-5.82	167.6	789.2	1.6	1.4	ARISAIG, HIGHLAND	11	140	0.40	3.30	3.50		
20080215	042805.2	57.50	-5.37	197.9	851.0	2.5	1.1	LAIR, HIGHLAND	8	125	0.30	4.39	5.90		
20080221	024229.7	55.15	-7.49	50.4	597.9	3.6	2.4	COUNTY DONEGAL, IRELAND	3	122	0.40	4.87	6.90	FELT COUNTY DONEGAL	
20080227	005647.8	53.40	-0.33	510.9	390.6	17.8	5.2	MARKET RASEN, LINCS	6	92	116	0.80	8.96	14.60	FELT ENGLAND . . .
20080227	024606.1	53.34	-0.35	510.1	384.3	20.8	1.8	MARKET RASEN, LINCS	3	275	0.00	0.91	0.40		
20080227	090305.0	53.36	-0.31	512.7	386.2	19.8	1.8	MARKET RASEN, LINCS	6	170	0.10	3.13	7.80		
20080227	165423.5	53.36	-0.36	509.2	386.5	19.6	2.2	MARKET RASEN, LINCS	7	168	0.10	2.16	5.70		
20080228	181923.8	53.35	-0.32	511.7	385.5	19.8	0.7	MARKET RASEN, LINCS	4	119	0.10	1.91	2.10		
20080228	224953.2	53.36	-0.33	511.0	385.9	19.6	0.7	MARKET RASEN, LINCS	4	116	0.10	2.62	2.70		
20080304	223134.3	53.33	-0.31	512.6	383.3	19.6	0.6	MARKET RASEN, LINCS	4	211	0.20	4.85	3.90		
20080306	210741.5	53.35	-0.32	511.6	385.2	18.9	0.8	MARKET RASEN, LINCS	5	118	0.20	2.91	2.20		
20080311	032256.5	53.20	-1.14	457.3	367.5	4.4	1.6	MANSFIELD, NOTTS	6	213	0.20	7.88	5.00	7KM NNE OF MANSFIELD	
20080315	224704.7	53.22	-0.94	470.8	369.7	17.5	0.9	OLLERTON, NOTTS	5	212	0.20	3.55	4.00	6KM NE OF OLLERTON	
20080319	201500.0							SONIC-EAST YORKSHIRE	2					FELT BRIDLINGTON . . .	
20080319	202500.0							SONIC-EAST YORKSHIRE	2					FELT BRIDLINGTON . . .	
20080320	002125.2	49.36	-1.78	416.1	-59.5	5.6	1.4	ENGLISH CHANNEL	4	350	0.10	5.76	1.70	40KM NW OF PENZANCE	
20080320	121000.0							SONIC-NORFOLK	2	1				FELT NORWICH . . .	
20080323	083309.7	50.37	-6.03	113.7	59.8	7.4	2.4	Celtic Sea	8	278	0.10	4.08	3.70	40KM NW OF PENZANCE	
20080323	062955.1	53.36	-0.32	511.7	386.1	20.8	2.0	MARKET RASEN, LINCS	12	140	0.40	5.58	3.70		
20080404	175215.8	55.46	-2.91	342.4	618.4	2.5	1.4	HAWICK, BORDERS	13	175	0.30	6.24	3.70	8KM NW OF HAWICK	
20080405	135726.3	53.36	-0.33	510.9	386.4	19.5	2.8	MARKET RASEN, LINCS	3	22	113	0.20	2.69	2.20	FELT MARKET RASEN
20080424	135448.6	54.91	-4.22	257.9	559.7	7.5	1.0	KIRKCUDBRIGHT, D & G	8	154	0.30	4.05	2.60		
20080429	234321.8	62.03	-6.64	157.6	1358.5	12.3	1.7	FAROE ISLANDS	2	340	0.10				
20080506	062551.1	52.13	-3.91	269.2	249.3	5.4	2.2	LAMPETER, CEREDIGION	13	148	0.40	4.11	5.30	11KM E OF LAMPETER	
20080511	195138.4	57.23	-5.37	196.5	820.2	4.5	0.6	SHIEL BRIDGE, HIGHLAND	6	147	0.30	4.49	3.30		
20080512	013659.6	52.72	-2.40	373.2	313.7	7.6	1.4	TELFORD, SHROPSHIRE	7	105	0.40	5.08	4.80	6KM NE OF TELFORD	
20080522	070243.4	49.47	-0.18	531.7	-46.6	7.0	1.8	ENGLISH CHANNEL	5	357	0.10			140KM ENE OF JERSEY	

**TABLE 1 : CATALOGUE OF EVENTS : 2008**

Year	Mo	Dy	Hr	Mn	Secs	Lat	Lon	kmE	kmN	Dep	Mag	Locality	Int No	Gap	RMS	ERH	ERZ	Comments	
2008	05	23	13	36	51.5	62.27	-6	4.7	168.1	1384.3	17.4	1.6	FAROE ISLANDS	2	345	0.60	2.73	3.20	13KM WNW OF PENRITH
2008	05	24	03	16	01.9	54.70	-2	9.7	337.6	534.7	4.5	1.3	PENRITH, CUMBRIA	13	99	0.20	3.54	4.50	13KM WNW OF PENRITH
2008	05	28	20	09	08.3	54.69	-2	9.5	338.6	533.3	6.3	2.5	PENRITH, CUMBRIA	23	65	0.40	5.28	7.60	13KM WNW OF PENRITH
2008	05	28	23	09	31.9	54.70	-2	9.6	338.4	534.5	6.7	2.0	PENRITH, CUMBRIA	13	105	0.50	4.13	5.30	13KM WNW OF PENRITH
2008	05	28	23	58	57.7	54.70	-2	9.4	339.2	534.3	4.0	1.0	PENRITH, CUMBRIA	9	9	0.30	4.13	5.30	13KM WNW OF PENRITH
2008	05	29	07	23	27.3	59.05	1	24	585.8	1022.7	15.7	2.5	NORTHERN NORTH SEA	17	261	0.70	10.7	11.10	180KM SE OF LERWICK
2008	05	30	07	55	15.5	49.84	0	0.3	546.1	-4.3	7.8	2.0	ENGLISH CHANNEL	5	321	0.30	170KM NE OF JERSEY	170KM NE OF JERSEY	170KM NE OF JERSEY
2008	06	16	01	10	14.2	51.60	-3	6.4	286.5	190.1	5.2	1.5	MAESTEG, BRIDGEND	6	164	0.30	5.97	5.50	5.50
2008	06	19	07	29	44.2	55.64	-2	9.1	342.6	639.1	7.4	0.4	GALASHIELS, BORDER	4	164	0.20	8.75	1.50	7KM NW OF GALASHIELS
2008	06	23	06	37	52.7	58.13	-3	0.8	336.5	915.9	6.9	2.1	MORAY FIRTH	13	216	0.40	8.93	9.40	30KM E OF HELMSDALE
2008	06	24	23	31	31.5	58.51	-4	9.7	227.1	961.3	4.3	1.9	KINLOCHBERVIE, HIGHLAND	12	208	0.40	9.63	7.00	13KM S OF CAPE WRATH
2008	06	27	14	23	35.7	55.40	-4	11	266.7	613.8	7.2	1.0	CUMNOCK, EAST AYRSHIRE	8	137	0.10	2.59	3.10	3.10
2008	06	30	00	34	17.1	56.95	1	8.9	636.5	790.8	10.0	2.2	CENTRAL NORTH SEA	33	198	0.30	1.27	0.00	250KM E OF ABERDEEN
2008	06	30	09	03	33.5	56.02	-4	0.0	275.6	682.0	4.5	1.4	DENNY, FALKIRK	10	79	0.30	4.83	9.30	9.30
2008	07	02	03	14	04.7	53.35	-0	33	511.5	385.3	19.3	1.5	MARKET RASEN, LINCS	5	274	0.10	6.79	3.10	3.10
2008	07	02	10	37	19.0	52.10	-3	41	303.7	245.7	8.4	2.1	BUILTH WELLS, POWYS	10	178	0.30	4.92	2.90	6KM S OF BUILTH WELLS
2008	07	02	10	48	16.6	55.51	-3	90	280.2	625.8	5.3	1.2	DOUGLAS, S LANARKSHIRE	8	96	0.20	2.92	9.00	6KM SW OF DOUGLAS
2008	07	02	16	00	00.0	0	-3	12	334.0	915.5	6.9	1.9	MORAY FIRTH	2	1	0.30	9.97	3.30	FELT NORTH WALES
2008	07	02	19	05	36.8	58.12	-3	0.9	335.6	915.5	5.9	1.6	MORAY FIRTH	9	212	0.20	6.55	3.30	30KM E OF HELMSDALE
2008	07	03	17	17	56.5	58.12	-3	0.9	335.6	915.5	5.9	1.6	MORAY FIRTH	10	214	0.30	9.97	8.40	30KM E OF HELMSDALE
2008	07	03	17	50	33.7	58.12	-3	11	334.8	915.8	5.2	1.5	MORAY FIRTH	10	215	0.40	8.11	9.30	30KM E OF HELMSDALE
2008	07	03	18	27	34.6	58.13	-3	11	334.8	915.8	4.8	1.7	MORAY FIRTH	10	214	0.40	8.64	9.90	30KM E OF HELMSDALE
2008	07	03	21	40	48.8	59.90	1	96	621.3	1118.8	10.0	2.4	NORTHERN NORTH SEA	7	304	0.40	0.00	0.00	0.00
2008	07	04	12	20	25.6	55.42	-4	15	263.9	615.9	7.8	0.8	CUMNOCK, EAST AYRSHIRE	7	142	0.20	175KM E OF LERWICK	175KM E OF LERWICK	175KM E OF LERWICK
2008	07	08	09	22	02.3	56.74	-3	79	290.4	762.9	3.6	1.4	ALDCLUINE, PERTH/KINROSS	12	103	0.40	6.04	5.70	5.70
2008	07	13	05	30	53.7	57.21	-6	24	144.2	821.3	9.6	1.1	ISLE OF SKYE	9	173	0.20	3.49	4.80	20KM S OF PORTREE
2008	07	17	07	26	47.4	56.15	-4	89	220.7	698.7	9.7	1.2	LOCH GOIL, ARGYLL/BUTE	10	165	0.30	6.24	6.60	6.60
2008	07	22	10	44	48.5	53.27	-2	37	375.5	374.4	17.0	1.3	KNUTSFORD, CHESHIRE	13	120	0.30	3.58	2.60	2.60
2008	07	22	16	03	09.6	53.37	-0	35	259.5	387.1	19.4	1.9	MARKET RASEN, LINCS	5	261	0.20	2.76	5.10	5.10
2008	07	23	00	32	3.3	53.03	-4	15	255.6	350.6	8.6	1.6	CAERNARVON, GWYNEDD	3	16	161	0.40	5.46	3.90 FELT PENYGROES . . .
2008	07	29	06	40	25.8	58.12	-3	08	336.7	915.6	7.5	1.2	MORAY FIRTH	7	216	0.30	1.26	1.50	30KM E OF HELMSDALE
2008	08	04	02	50	21.3	56.47	-5	29	197.4	735.3	7.3	1.8	BONAWE, ARGYLL/BUTE	24	155	0.40	5.60	8.00	8.00
2008	08	04	14	49	20.1	55.41	-4	26	256.8	615.2	7.5	1.1	CUMNOCK, EAST AYRSHIRE	10	137	0.50	6.91	6.91	6.91
2008	08	07	12	13	27.8	57.52	-5	69	179.1	853.6	8.6	1.6	SHIELDAIG, HIGHLAND	10	120	0.20	3.57	7.40	7.40
2008	08	08	22	01	27.1	51.95	1	68	652.9	234.2	8.7	2.2	SOUTHERN NORTH SEA	7	212	0.30	1.46	4.10	27KM EAST OF HARWICH
2008	08	09	09	56	52.4	52.34	-2	51	365.5	271.7	10.7	1.9	LUDLOW, SHROPSHIRE	9	134	0.40	9.40	9.30	15KM ESE OF LUDLOW
2008	08	09	12	32	03.2	55.82	-5	36	189.7	663.3	7.8	1.8	TARBERT, ARGYLL/BUTE	3	15	188	0.40	6.04	6.60 FELT TARBERT . . .
2008	08	12	22	23	8.1	53.38	-2	58	361.6	387.6	6.4	1.4	WARRINGTON, CHESHIRE	2	13	133	0.40	4.44	1.30 FELT WARRINGTON

**TABLE 1 : CATALOGUE OF EVENTS : 2008**

YearMoDy	HrMnSecs	Lat	Lon	kmE	kmN	Mag	Locality	Int No	Gap	RMS	ERH	ERZ	Comments
20080821	043804.4	53.33	-0.62	491.9	381.8	7.7	1.5 LINCOLN, LINCOLNSHIRE	5	258	0.20	20.74	11KM NNW OF LINCOLN	
20080822	233052.0	56.56	-5.25	200.5	745.8	5.6	1.2 PORT APPIN, ARGYLL/BUTE	14	168	0.50	1.41	6.40	
20080823	125230.1	59.99	4.88	783.4	1142.9	10.0	2.8 SOUTHERN NORWAY	12	197	0.30	7.38	0.00	
20080827	235429.6	49.07	-4.19	240.1	-90.1	7.8	1.7 ENGLISH CHANNEL	6	245	0.40	150KM W OF JERSEY		
20080829	163045.0	58.12	-3.14	333.0	914.5	6.3	0.9 MORAY FIRTH	5	210	0.20	8.28	8.50	
20080830	193319.0	53.65	-3.16	323.6	417.9	4.7	1.6 IRISH SEA	15	72	0.60	5.50	9.60	
20080905	050215.1	55.10	-3.62	296.9	579.4	8.0	1.1 DUMFRIES, D & G	12	144	0.50	5.06	10.40	
20080908	040253.1	56.29	-6.03	150.9	717.7	4.5	1.3 ISLE OF MULL	15	225	0.40	8.52	8.00	
20080910	150550.6	51.85	-3.42	302.5	217.4	14.1	1.4 BRECON, POWYS	6	163	0.20	4.88	8.90	
20080912	140706.1	55.41	-4.24	258.1	615.0	7.1	1.3 CUMNOCK, EAST AYRSHIRE	12	150	0.40	5.86	10.00	
20080918	210103.1	51.04	-2.87	339.0	126.8	4.5	1.2 BRIDGWATER, SOMERSET	2	8	174	0.50	7.19	
20080919	052351.6	49.12	-3.91	260.5	-84.6	6.9	1.8 ENGLISH CHANNEL	5	263	0.40	125KM W OF JERSEY		
20080921	083127.7	49.47	-0.01	543.9	-45.9	8.8	2.4 ENGLISH CHANNEL	6	295	0.30	150KM ENE OF JERSEY		
20080929	200454.7	57.22	-5.39	195.3	819.5	4.2	1.3 SHIEL BRIDGE, HIGHLAND	4	125	0.10	2.66	21.30	
20080930	204632.1	58.08	-3.18	330.4	910.6	8.6	2.5 MORAY FIRTH	19	277	0.40	12.79	5.30	
20081006	003651.1	56.23	-3.74	291.9	705.0	4.3	1.5 BLACKFORD, PERTH/KINROS	17	69	0.40	5.09	8.90	
20081010	042839.3	56.83	-5.53	185.0	776.8	12.7	3.5 GLENFINNAN, HIGHLAND	4	32	112	0.50	5.10	
20081014	022343.3	62.34	1.61	586.8	1389.2	7.4	3.9 NORWEGIAN SEA	39	176	1.30	275KM NE OF LERWICK		
20081024	232137.3	52.74	-2.49	367.2	316.2	8.8	1.8 TELFORD, SHROPSHIRE	13	106	0.40	3.94	7.20	
20081026	180625.5	52.20	-2.63	356.0	256.0	5.3	3.5 BROMYARD, HEREFORDSHIRE	4	28	81	0.30	2.73	
20081103	095342.4	56.37	-5.52	182.5	725.3	15.5	2.5 OBAN, ARGYLL/BUTE	3	26	176	0.40	8.07	
20081117	020447.4	48.88	-2.93	331.7	-113.1	4.3	1.7 ENGLISH CHANNEL	6	274	0.60	70KM SW OF JERSEY		
20081125	032410.3	53.53	0.41	560.0	406.2	19.4	2.2 SOUTHERN NORTH SEA	6	240	0.20	40.31	51.30	
20081211	131205.3	55.39	-4.23	259.0	613.3	7.4	1.2 CUMNOCK, EAST AYRSHIRE	7	112	0.30	3.66	12.40	
20081211	151200.4	55.38	-4.26	256.6	612.1	7.7	1.1 CUMNOCK, EAST AYRSHIRE	7	150	0.50	7.35	18.80	
20081212	201110.8	58.08	-3.14	332.7	911.1	5.3	1.5 MORAY FIRTH	6	279	0.30	5.24	12.70	
20081216	073122.3	58.08	-3.09	335.8	910.3	6.9	1.7 MORAY FIRTH	5	279	0.40	8.56	19.40	
20081219	200502.3	57.13	-5.49	188.9	809.7	2.9	1.1 GLEN SHIEL, HIGHLAND	3	162	0.10	6.67	2.30	
20081219	220100.8	57.12	-5.49	189.0	809.2	2.4	1.7 GLEN SHIEL, HIGHLAND	7	181	0.50	5.13	7.80	
20081219	220648.1	57.12	-5.50	188.2	809.2	2.5	1.8 GLEN SHIEL, HIGHLAND	6	194	0.30	1.04	4.90	
20081225	110151.8	53.90	-3.69	288.7	446.6	4.5	2.3 IRISH SEA	16	113	0.40	5.35	7.60	
20081227	210040.9	51.61	-0.70	490.2	190.8	15.2	1.9 HIGH WYCOMBE, BUCKS	8	254	0.20	3.05	1.60	

TABLE 2 : PHASE DATA

**TABLE 2 : PHASE DATA**

GAL1 HE 241.0 AML 13:22 13.15 7 0.32	Locality: COUNTY DONEGAL, IRELAND
GAL1 HN 241.0 AML 13:22 16.85 5 0.26	Velocity model: Lownet Xnear: 300.0 Xfar: 600.0
January 30 2008 Time: 13:25 08.0 UTC Magnitude: 1.2 ML	Comment: FELT COUNTY DONEGAL Intensity: 3
Lat: 52.245N Lon: -4.739W Depth: 4.8 km	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES
Grid Ref: 213.03 kmE 264.34 kmN RMS: 0.10 secs	GMM SZ 142.0 EP 02:42 52.73 -0.13
Locality: CARDIGAN BAY	GMM SZ 142.0 EP 02:42 54.25 -0.07
Velocity model: Mid Wales Xnear: 200.0 Xfar: 300.0	GAL1 HZ 181.0 EP 02:42 58.94 0.74
Comment: 30KM E OF ABERAERON	GAL1 HE 181.0 ES 02:43 18.65 -0.32
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES	GAL1 HN 181.0 AML 02:43 24.30 54 0.26
HTR SZ 102.0 EP 13:25 25.23 -0.02	GAL1 HE 181.0 AML 02:43 24.86 41 0.32
YRC SZ 112.0 EP 13:25 26.96 0.12	PGB1 HZ 204.0 EP 02:43 01.30 0.19
MCH1 HZ 122.0 EP 13:25 28.20 -0.16	PGB1 HE 204.0 ES 02:43 24.80 0.78
MCH1 HN 122.0 ES 13:25 43.00 -0.03	PGB1 HN 204.0 AML 02:43 34.56 54 0.46
MCH1 HE 122.0 AML 13:25 44.95 6 0.42	PGB1 HE 204.0 AML 02:43 35.32 33 0.34
MCH1 HN 122.0 AML 13:25 47.02 6 0.46	KAR1 SZ 222.0 EP 02:43 04.13 0.69
WPM SZ 126.0 EP 13:25 28.81 -0.11	DSB BZ 224.0 EP 02:43 03.62 -0.03
WME SZ 131.0 EP 13:25 29.70 -0.02	DSB BN 224.0 ES 02:43 28.97 0.57
HTL HZ 140.0 EP 13:25 30.94 -0.09	DSB BE 224.0 AML 02:43 33.35 37 0.50
HGH SZ 149.0 EP 13:25 32.70 0.32	DSB BN 224.0 AML 02:43 35.82 22 0.50
KPL HZ 269.0 EP 02:43 08.86 -0.80	EAB SZ 229.0 EP 02:43 03.55 -0.36
February 5 2008 Time: 23:57 54.7 UTC Magnitude: 2.0 ML	KPL HZ 269.0 EP 02:43 46.65 10 0.54
Lat: 51.769N Lon: -0.962W Depth: 21.5 km	KPL HE 269.0 AML 02:43 52.23 13 0.32
Grid Ref: 471.62 kmE 208.37 kmN RMS: 0.50 secs	ESK HZ 273.0 EP 02:43 09.45 -0.35
Locality: AYLESBURY,BUCKS	ESK HN 273.0 ES 02:43 38.88 -0.17
Velocity model: Lownet Xnear: 150.0 Xfar: 300.0	ESK HN 273.0 AML 02:43 53.68 23 0.76
Comment: 10KM SW OF AYLESBURY	ESK HE 273.0 AML 02:43 57.88 16 0.48
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES	ECK SZ 278.0 EP 02:43 10.23 -0.18
SKP EZ 11.7 IP D 23:57 59.62 0.72	YRC SZ 284.0 EP 02:43 10.78 -0.38
SKP EZ 11.7 ES 23:58 01.80 -0.13	WME SZ 285.0 EP 02:43 10.93 -0.32
WOL BZ 53.8 EP 23:58 03.38 -0.77	YRE SZ 314.0 EP 02:43 15.06 0.17
WOL BN 53.8 ES 23:58 10.59 -0.43	February 27 2008 Time: 00:56 47.8 UTC Magnitude: 5.2 ML
WOL BN 53.8 AML 23:58 12.55 39 0.20	Lat: 53.400N Lon: -0.332W Depth: 17.8 km
WOL BE 53.8 AML 23:58 13.23 25 0.25	Grid Ref: 510.89 kmE 390.57 kmN RMS: 0.80 secs
SWN1 HZ 64.6 EP 23:58 05.85 0.16	Locality: MARKET RASEN,LINCS
SWN1 HE 64.6 ES 23:58 13.97 0.29	Velocity model: Lownet Xnear: 150.0 Xfar: 550.0
SWN1 HN 64.6 AML 23:58 14.37 85 0.30	Comment: FELT ENGLAND... Intensity: 6
SWN1 HE 64.6 AML 23:58 14.52 47 0.66	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES
CWF HZ 110.0 IP D 23:58 12.51 0.28	KBI1 SZ 81.3 IP C 00:57 01.56 0.41
CWF HN 110.0 ES 23:58 24.18 -0.82	CWF HZ 98.4 EP 00:57 03.71 -0.28
CWF HE 110.0 AML 23:58 24.84 42 0.44	CWF HN 98.4 ES 00:57 15.22 0.08
CWF HN 110.0 AML 23:58 25.01 18 0.10	CWF HE 98.4 AML 00:57 15.95 64128 0.24
MCH1 HZ 143.0 EP 23:58 17.16 0.47	CWF HE 98.4 AML 00:57 16.10 86527 0.25
MCH1 HN 143.0 ES 23:58 32.39 -0.32	LHO SZ 102.0 IP D 00:57 04.58 0.38
MCH1 HN 143.0 AML 23:58 34.45 28 0.34	HPK HZ 106.0 EP 00:57 05.48 0.87
MCH1 HE 143.0 AML 23:58 34.83 22 0.34	HPK HE 106.0 ES 00:57 18.20 1.28
HTR SZ 162.0 EP 23:58 19.85 0.66	HPK HN 106.0 AML 00:57 20.24 0.21
STNC HZ 170.0 EP 9 23:58 21.59 1.49	HPK HE 106.0 AML 00:57 20.40 0.17
STNC HN 170.0 ES 9 23:58 40.68 0.58	KWE SZ 109.0 IP C 00:57 05.34 0.15
STNC HN 170.0 AML 23:58 41.33 72 0.30	ABA1 SZ 114.0 IP D 00:57 06.37 0.58
STNC HE 170.0 AML 23:58 41.51 89 0.38	STNC HZ 130.0 EP 00:57 08.25 0.19
HPK HN 248.0 AML 23:59 04.80 18 0.56	STNC HE 130.0 ES 00:57 24.13 1.25
HPK HE 248.0 AML 23:59 08.92 15 0.74	STNC HE 130.0 AML 00:57 29.36 85406 0.44
February 12 2008 Time: 13:38 52.1 UTC Magnitude: 1.4 ML	STNC HN 130.0 AML 00:57 25.50 78149 0.32
Lat: 56.936N Lon: -5.821W Depth: 1.6 km	AWI1 SZ 135.0 IP D 00:57 09.25 0.50
Grid Ref: 167.58 kmE 789.23 kmN RMS: 0.40 secs	AEU SZ 136.0 IP D 00:57 09.25 0.29
Locality: ARISAIG,HIGHLAND	AEU SZ 136.0 ES 00:57 25.02 0.58
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0	TCR SZ 194.0 IP D 00:57 16.10 -0.25
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES	XAL SZ 204.0 EP 00:57 18.05 0.32
KAR1 SZ 1.9 IP C 13:38 52.50 -0.26	SWN1 HZ 232.0 EP 00:57 20.77 -0.45
KPL HZ 46.1 IP C 13:39 00.66 0.12	SWN1 HZ 232.0 AML 00:57 51.13 52679 0.39
KPL HN 46.1 AML 13:39 00.94 31 0.22	SWN1 HZ 232.0 AML 00:57 51.89 63989 0.57
KPL HN 46.1 ES 13:39 06.09 -0.61	MCH1 HZ 238.0 EP 00:57 20.98 -0.99
KPL HE 46.1 AML 13:39 07.25 23 0.26	MCH1 HN 238.0 ES 00:57 47.13 0.18
KAC SZ 70.2 EP 13:39 04.46 0.08	MCH1 HN 238.0 AML 00:57 53.78 12567 0.22
RRR SZ 103.0 EP 13:39 09.76 0.37	MCH1 HE 238.0 AML 00:57 54.01 16196 0.29
RRR SE 103.0 AML 13:39 15.97 7 0.34	WPM SZ 239.0 EP 00:57 21.32 -0.70
RRR SN 103.0 AML 13:39 25.82 12 0.26	WOL BZ 240.0 EP 00:57 21.50 -0.66
MDO SZ 105.0 EP 13:39 10.17 0.42	RRH SZ 247.0 EP 00:57 22.63 -0.42
RRH SZ 121.0 EP 13:39 12.38 0.09	EAB SZ 258.0 EP 00:57 24.18 -0.26
EAB SZ 123.0 EP 13:39 12.72 0.07	PMS1 SZ 258.0 EP 00:57 23.72 -0.65
PMS1 SZ 138.0 EP 13:39 15.26 0.35	MVH1 SZ 148.0 EP 13:39 15.60 -0.62
MVH1 SZ 148.0 EP 13:39 33.83 -0.56	WLF1 HZ 271.0 EP 00:57 25.34 -0.84
PGB1 HE 150.0 ES 13:39 33.83	WLF1 HN 271.0 AML 00:58 03.65 13316 0.59
PGB1 HN 150.0 AML 13:39 35.61 9 0.32	WLF1 HE 271.0 AML 00:58 04.25 21961 0.24
PGB1 HE 150.0 AML 13:39 37.14 11 0.34	TFO1 HZ 274.0 EP 00:57 25.83 -0.53
MMEI SZ 178.0 EP 13:39 21.10 0.56	TFO1 HE 274.0 AML 00:58 17.00 14648 0.41
February 15 2008 Time: 04:28 05.2 UTC Magnitude: 1.1 ML	TFO1 HN 274.0 AML 00:58 12.32 18518 0.48
Lat: 57.504N Lon: -5.374W Depth: 2.5 km	YRE SZ 278.0 EP 00:57 26.16 -0.70
Grid Ref: 197.88 kmE 850.97 kmN RMS: 0.30 secs	YRC SZ 283.0 EP 00:57 26.91 -0.62
Locality: LAIR,HIGHLAND	ESK HZ 284.0 EP 00:57 26.64 -0.99
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0	ESK HN 284.0 AML 00:58 11.44 5120 0.36
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES	ESK HE 284.0 AML 00:58 10.90 4631 0.37
KAC SZ 4.5 IP C 04:28 06.58 0.09	WIM SZ 298.0 EP 00:57 28.44 -1.03
KAC SZ 4.5 ES 04:28 07.07 -0.35	ESY SZ 317.0 EP 00:57 31.01 -0.77
KPL HZ 24.8 IP D 04:28 10.26 0.36	EBL SZ 317.0 EP 00:57 31.25 -0.60
KPL HN 24.8 ES 04:28 13.15 -0.16	GAL1 HZ 329.0 EP 00:57 32.24 -1.10
KPL HN 24.8 AML 04:28 13.63 15 0.44	GAL1 HE 329.0 AML 00:58 30.50 3170 0.73
KPL HE 24.8 AML 04:28 13.85 14 0.24	GAL1 HN 329.0 AML 00:58 27.13 3223 0.44
RRR SZ 47.1 EP 04:28 13.71 0.03	EDI HZ 336.0 EP 00:57 33.47 -0.68
RRR SE 47.1 ES 04:28 19.33 -0.53	EDI HE 336.0 AML 00:58 34.49 3336 0.77
RRR SN 47.1 AML 04:28 24.87 11 0.22	EDI HN 336.0 AML 00:58 41.36 3943 0.46
RRR SE 47.1 AML 04:28 24.96 12 0.24	EAU SZ 338.0 EP 00:57 34.31 -0.21
MDO SZ 61.0 IP C 04:28 15.78 -0.17	HEX SZ 352.0 EP 00:57 35.49 -0.63
MVH1 SZ 85.1 EP 04:28 19.92 0.29	EBH SZ 377.0 EP 00:57 39.16 -0.18
RRH SZ 91.0 EP 04:28 20.40 -0.13	PGB1 HZ 379.0 EP 00:57 39.36 -0.24
RSC SZ 94.8 EP 04:28 21.83 0.71	PGB1 HE 379.0 AML 00:58 47.47 4641 0.70
MCD SZ 127.0 EP 04:28 26.38 0.19	PGB1 HN 379.0 AML 00:58 47.62 5785 0.72
MCD SE 127.0 ES 04:28 41.06 -0.44	HTL HZ 390.0 EP 00:57 39.85 -1.05
MCD SE 127.0 AML 04:28 44.54 21 0.44	HTL HE 390.0 AML 00:58 44.73 4520 0.79
MCD SN 127.0 AML 04:28 44.63 14 0.72	HTL HN 390.0 AML 00:58 46.86 3530 0.42
DSB BZ 403.0 EP 00:57 41.84 -0.66	DSB BN 403.0 AML 00:58 46.73 1791 0.84
February 21 2008 Time: 02:42 29.7 UTC Magnitude: 2.4 ML	DSB BE 403.0 AML 00:58 52.47 1379 0.89
Lat: 55.152N Lon: -7.489W Depth: 3.6 km	DSB SZ 403.0 EP 00:57 42.36 -0.25
Grid Ref: 50.43 kmE 597.95 kmN RMS: 0.40 secs	EAB SZ 403.0 EP 00:57 42.36 -0.25

**TABLE 2 : PHASE DATA**

DYA	HZ	412.0	EP	00:57	42.09	-1.64	HPK	HZ	110.0	EP	09:03	22.52	0.15								
DYA	HE	412.0	ES	00:58	22.78	-1.81	HPK	HN	110.0	ES	09:03	34.91	-0.14								
DYA	HN	412.0	AML	00:58	46.21	3870 0.50	HPK	HN	110.0	AML	09:03	36.75	38 0.21								
DYA	HE	412.0	AML	00:58	51.83	3351 0.49	ABA1	SZ	110.0	EP	09:03	22.39	-0.06								
UCC	HZ	432.0	EP	00:57	44.06	-2.14	HPK	HE	110.0	AML	09:03	35.93	44 0.23								
OPLO	BZ	463.0	EP	00:57	49.90	-0.13	February 27 2008 Time: 16:54 23.5 UTC Magnitude: 2.2 ML														
WIT	BZ	473.0	EP	00:57	51.28	-0.01	Lat: 53.364N	Lon: -0.359W	Depth: 19.6 km	Grid Ref: 509.18 kmE 386.52 kmN	RMS: 0.10 secs										
JSA	Hz	486.0	EP	00:57	50.34	-2.51	Locality: MARKET RASEN,LINCS														
JSA	HN	486.0	AML	00:58	50.32	1486 0.56	Velocity model: Lownet Xnear: 100.0 Xfar: 200.0														
JSA	HE	486.0	AML	00:59	07.23	2813 0.65	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES					
MCD	SZ	501.0	EP	00:57	54.10	-0.71	KB11	SZ	78.8	EP	16:54	36.49	-0.01								
WTSB	BZ	508.0	EP	00:57	54.04	-1.56	CWF	HZ	94.3	EP	16:54	38.59	-0.10								
MDO	SZ	517.0	EP	00:57	56.26	-0.60	CWF	HE	94.3	ES	16:54	49.82	0.04								
HGN	BZ	520.0	EP	00:57	55.37	-1.74	CWF	HE	94.3	AML	16:54	50.47	55 0.16								
KAR1	SZ	525.0	EP	00:57	57.00	-0.83	CWF	HN	94.3	AML	16:54	51.01	39 0.10								
MEM	HZ	534.0	EP	00:57	56.95	-2.02	LHO	SZ	101.0	EP	16:54	39.53	-0.23								
KPL	HZ	553.0	EP	00:58	00.13	-1.13	KWE	SZ	106.0	EP	16:54	40.62	0.18								
KAC	SZ	554.0	EP	00:58	00.26	-1.15	HPK	HZ	107.0	EP	16:54	40.66	0.21								
IBBN	BZ	558.0	EP	00:58	00.61	-1.31	HPK	HE	107.0	ES	16:54	52.78	-0.04								
MVH1	SZ	559.0	EP	00:58	01.16	-0.88	HPK	HN	107.0	AML	16:54	54.49	120 0.20								
BUG	BZ	561.0	EP	00:58	01.46	-0.79	HPK	HE	107.0	AML	16:54	55.45	96 0.24								
MLA1	SZ	578.0	EP	00:58	03.44	-1.00	ABA1	SZ	114.0	EP	16:54	41.44	-0.01								
KSK	SZ	606.0	EP	00:58	07.81	-0.09	AEU	SE	135.0	ES	16:54	59.85	0.00								
ORE	SZ	612.0	EP	00:58	07.22	-1.41	AEU	SE	135.0	AML	16:55	02.02	47 0.12								
VAL	BZ	689.0	EP	00:58	17.54	-0.73	AEU	SN	135.0	AML	16:55	02.83	48 0.18								
MUD	BZ	697.0	EP	00:58	17.17	-2.10	February 28 2008 Time: 18:19 23.8 UTC Magnitude: 0.7 ML														
BSEG	BZ	706.0	EP	00:58	18.35	-2.00	Lat: 53.354N	Lon: -0.322W	Depth: 19.8 km	Grid Ref: 511.67 kmE 385.47 kmN	RMS: 0.10 secs										
STAV	SZ	721.0	EP	9	18.18	-4.06	Locality: MARKET RASEN,LINCS														
STAV	SN	721.0	ES	9	27.75	0.60	Velocity model: Lownet Xnear: 100.0 Xfar: 200.0														
SNART	EZ	724.0	EP	00:58	19.27	-3.40	STAT	CO	DIST	PHAS	WT P	HrMn	SECS	AMPL	PERI	RES					
SNART	EN	724.0	ES	00:59	30.17	-1.78	CWF	HN	95.2	ES	18:19	50.23	-0.05								
KMY	SZ	732.0	EP	00:58	20.70	-2.98	CWF	HN	95.2	EP	18:19	39.21	0.10								
KMY	SE	732.0	ES	00:59	30.18	-3.52	LMK	HZ	11.4	EP	18:19	27.64									
LRW	HZ	752.0	EP	00:58	23.07	-3.08	LMK	HN	11.4	AML	18:19	31.58	6 0.10								
LRW	HE	752.0	AML	00:59	39.27	407 0.36	LMK	HE	11.4	ES	18:19	30.93	0.12								
LRW	HN	752.0	AML	00:59	39.98	319 0.33	LMK	HE	11.4	AML	18:19	31.56	10 0.16								
ECH	BZ	781.0	EP	00:58	26.68	-3.19	LICO	HZ	21.9	EP	18:19	28.90	0.03								
BLLS	SZ	790.0	EP	00:58	27.96	-3.04	LICO	HN	21.9	AML	18:19	32.54	-0.02								
BLLS	SE	790.0	ES	00:59	44.03	-2.35	LICO	HE	21.9	AML	18:19	33.02	43 0.15								
EGD	EZ	836.0	EP	00:58	31.79	-4.90	LICO	HE	21.9	AML	18:19	32.94	61 0.13								
EGD	EZ	836.0	ES	00:59	53.34	-2.87	LIGL	HZ	21.4	EP	18:19	28.90	0.06								
ODD1	SZ	841.0	EP	00:58	32.77	-4.58	LIGL	HN	21.4	AML	18:19	33.15	10 0.14								
ODD1	SN	841.0	ES	00:59	55.06	-2.30	LIGL	HE	21.4	AML	18:19	30.15	11 0.13								
STU	BZ	842.0	EP	00:58	35.67	-1.75	LIGL	HN	21.4	ES	18:19	01.95	-0.06								
BER	EZ	850.0	EP	00:58	33.40	-5.04	LIGL	HZ	22.2	EP	18:19	02.54	31 0.10								
BER	HZ	850.0	EP	00:58	34.38	-4.06	LIGL	HN	22.2	EP	18:19	02.74	21 0.13								
ASK	EZ	856.0	EP	00:58	34.20	-4.98	LIGL	HE	22.2	ES	18:19	03.09	0.05								
ASK	EZ	856.0	ES	00:59	57.42	-3.10	LIGL	HE	22.2	AML	18:19	03.15	10 0.14								
COP	BZ	863.0	EP	00:58	38.15	-1.83	LIGL	HN	22.2	AML	18:19	03.26	11 0.13								
MOX	HZ	874.0	EP	00:58	39.88	-1.61	LIGL	HE	22.2	ES	18:19	03.44	0.13								
SUE	SZ	906.0	EP	00:58	40.98	-4.41	LIGL	HN	22.2	EP	18:19	03.60	0.00								
SUE	SN	906.0	ES	01:00	05.48	-5.78	LIGL	HE	22.2	AML	18:19	03.78	6 0.07								
KONO	BZ	924.0	EP	00:58	43.49	-4.23	LIGL	HN	22.2	ES	18:19	04.09	19.63								
KONO	BZ	924.0	ES	01:00	13.87	-1.43	LIGL	HE	22.2	AML	18:19	04.24	20.27	2 0.11							
HYA	SZ	949.0	EP	00:58	47.94	-2.84	LIGL	HN	22.2	ES	18:19	04.30	21.07	2 0.08							
HYA	SE	949.0	ES	01:00	16.22	-4.37	LIGL	HE	22.2	EP	18:19	04.46	21.07	2 0.08							
FOO	HZ	968.0	EP	00:58	47.91	-5.17	LIGL	HN	22.2	ES	18:19	04.59	21.07	2 0.08							
FOO	HZ	968.0	ES	01:00	18.82	-5.75	LIGL	HE	22.2	EP	18:19	04.74	21.07	2 0.08							
SSB	BZ	969.0	EP	00:58	47.99	-5.45	LIGL	HN	22.2	ES	18:19	04.89	21.07	2 0.08							
BSD	BZ	1009.0	EP	00:58	55.71	-2.61	LIGL	HE	22.2	AML	18:19	05.04	21.07	2 0.08							
BRG	BZ	1015.0	EP	00:58	57.39	-1.68	LIGL	HN	22.2	ES	18:19	05.19	21.07	2 0.08							
WET	BZ	1034.0	EP	00:58	59.20	-2.32	LIGL	HE	22.2	EP	18:19	05.34	21.07	2 0.08							
DOMB	SZ	1116.0	EPn	00:59	07.41	-4.31	LIGL	HN	22.2	AML	18:19	05.49	21.07	2 0.08							
DOMB	SZ	1116.0	ESn	01:00	59.81	-2.99	LIGL	HZ	22.2	EP	18:19	05.64	21.07	2 0.08							
MOL	HZ	1121.0	EPn	00:59	08.77	-3.52	LIGL	HN	22.2	ES	18:19	05.79	21.07	2 0.08							
MOL	HZ	1121.0	ESn	01:00	53.86	-3.94	LIGL	HE	22.2	EP	18:19	05.94	21.07	2 0.08							
RUSF	BZ	1134.0	EP	00:59	10.40	-3.65	LIGL	HN	22.2	AML	18:19	06.09	21.07	2 0.08							
OGDI	BZ	1141.0	EP	00:59	11.42	-3.48	LIGL	HE	22.2	ES	18:19	06.24	21.07	2 0.08							
ARBF	BZ	1177.0	EP	00:59	15.71	-3.64	LIGL	HN	22.2	EP	18:19	06.40	21.07	2 0.08							
ANTF	BZ	1223.0	EP	00:59	20.52	-4.47	LIGL	HE	22.2	ES	18:19	06.55	21.07	2 0.08							
NSS	BZ	1422.0	EPn	00:5																	

**TABLE 2 : PHASE DATA**

LIGR	HZ	24.8	EP	21:07	46.71	0.05	LIGL	HZ	20.3	IP	D	06:30	00.50	0.25													
LIGR	SZ	24.8	EP	21:07	46.72	0.06	LIGL	HZ	20.3	ES		06:30	03.86	-0.16													
CWF	HZ	95.0	EP	21:07	56.61	-0.18	LIGL	HE	20.3	AML		06:30	04.74	283 0.21													
CWF	HE	95.0	ES	21:08	08.18	0.20	LIGL	HN	20.3	AML		06:30	04.96	200 0.11													
CWF	HN	95.0	AML	21:08	08.55	3 0.12	LICO	HZ	24.8	IP	C	06:30	01.53	0.82													
CWF	HE	95.0	AML	21:08	08.87	3 0.13	LICO	HN	24.8	ES		06:30	05.35	0.53													
March 11 2008 Time: 03:22 56.5 UTC Magnitude: 1.6 ML																											
Lat: 53.201N	Lon:	-1.142W		Depth:	4.4 km		LIGR	SZ	27.5	EP		06:30	00.86	-0.18													
Grid Ref: 457.31 kmE	367.48 kmN		RMS: 0.20 secs				KBII	SZ	83.7	EP		06:30	08.57	-0.23													
Locality: MANSFIELD,NOTTS							CWF	HZ	98.1	EP		06:30	10.79	-0.04													
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0							CWF	HN	98.1	ES		06:30	21.77	-0.56													
Comment: 7KM NNE OF MANSFIELD							CWF	HN	98.1	AML		06:30	22.24	47 0.46													
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES							CWF	HN	98.1	AML		06:30	22.52	55 0.36													
KBII SZ 26.5 EP 03:23 01.45 -0.07							LHO	SZ	106.0	EP		06:30	11.64	-0.36													
KWE SZ 51.2 EP 03:23 05.82 0.26							HPK	HZ	110.0	EP		06:30	12.92	0.39													
CWF HZ 52.7 IP C 03:23 05.60 -0.18							HPK	HN	110.0	ES		06:30	25.08	-0.18													
CWF HE 52.7 ES 03:23 12.55 0.01							HPK	HE	110.0	AML		06:30	26.16	69 0.20													
CWF HN 52.7 AML 03:23 19.08 13 0.15							HPK	HN	110.0	AML		06:30	26.48	65 0.22													
CWF HE 52.7 AML 03:23 20.30 16 0.18							KWE	SZ	111.0	EP		06:30	12.53	-0.18													
LHO SZ 61.0 EP 03:23 06.89 -0.22							STNC	HE	132.0	AML		06:30	29.48	23 0.50													
HPK HZ 90.1 EP 03:23 11.90 0.32							AEU	SN	132.0	AML		06:30	32.64	49 0.24													
HPK HE 90.1 ES 03:23 22.45 -0.13							STNC	HZ	132.0	EP		06:30	16.11	0.55													
HPK HE 90.1 AML 03:23 27.17 33 0.21							STNC	HN	132.0	AML		06:30	33.52	21 0.50													
HPK HN 90.1 AML 03:23 28.64 38 0.40							AEU	SZ	132.0	EP		06:30	15.69	0.18													
MCH1 HZ 184.0 EP 03:23 25.25 0.05							AEU	SE	132.0	AML		06:30	32.85	47 0.15													
MCH1 HN 184.0 ES 03:23 46.26 0.11							MCH1	HZ	239.0	EP		06:30	28.64	-0.26													
MCH1 HE 184.0 AML 03:23 50.25 17 0.40							MCH1	HN	239.0	AML		06:30	59.13	8 0.78													
MCH1 HN 184.0 AML 03:23 50.63 20 0.30							MCH1	HE	239.0	AML		06:31	04.30	7 0.82													
March 15 2008 Time: 22:47 04.7 UTC Magnitude: 0.9 ML																											
Lat: 53.219N	Lon:	-0.940W		Depth:	17.5 km		April 4 2008 Time: 17:52 15.8 UTC Magnitude: 1.4 ML																				
Grid Ref: 470.77 kmE	369.66 kmN		RMS: 0.20 secs				Lat: 55.456N	Lon:	-2.911W		Depth:	2.5 km															
Locality: OLLERTON,NOTTS							Grid Ref: 342.39 kmE	618.40 kmN																			
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0							Locality: HAWICK,BORDERS																				
Comment: 6KM NE OF OLLERTON							Velocity model: Lownet Xnear: 100.0 Xfar: 200.0																				
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES							Comment: 8KM NW OF HAWICK																				
LICO HZ 21.9 EP 22:47 09.39 -0.09							STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES																				
LICO HE 21.9 ES 22:47 13.26 0.28							ESK HZ 24.2 EP 17:52 20.53 0.06																				
LICO HE 21.9 AML 22:47 13.61 36 0.12							ESK HZ 24.2 ES 17:52 23.35 -0.49																				
LICO HN 21.9 AML 22:47 13.73 39 0.15							ESK HE 24.2 AML 17:52 24.67 30 0.22																				
LIGR SZ 34.8 EP 22:47 11.24 -0.01							ESK HE 24.2 AML 17:52 24.73 40 0.14																				
LIGR SZ 34.8 ES 22:47 15.83 -0.20							ECK SZ 33.6 EP 17:52 21.97 -0.10																				
LMK HZ 48.7 EP 22:47 13.15 -0.17							ECK SZ 33.6 EP 17:52 22.49 -0.04																				
LMK HE 48.7 ES 22:47 19.50 -0.12							EBL SZ 36.2 EP 17:52 24.10 0.15																				
CWF HZ 58.9 EP 22:47 15.03 0.15							BHH SZ 44.8 EP 17:52 29.60 -0.27																				
CWF HN 58.9 ES 22:47 22.24 -0.07							BHH SE 44.8 AML 17:52 30.20 50 0.16																				
CWF HE 58.9 AML 22:47 24.01 5 0.07							BHH SN 44.8 AML 17:52 30.52 69 0.46																				
CWF HN 58.9 AML 22:47 24.76 5 0.09							ESY SZ 54.7 EP 17:52 25.00 -0.57																				
LIGL HZ 60.5 EP 22:47 15.18 0.08							EDI HZ 54.9 EP 17:52 25.66 0.10																				
LIGL HN 60.5 ES 22:47 22.84 0.15							EDI HN 54.9 ES 17:52 32.33 -0.32																				
March 20 2008 Time: 00:21 25.2 UTC Magnitude: 1.4 ML																											
Lat: 49.364N	Lon:	-1.778W		Depth:	5.6 km		EBB SZ 82.9 AML 17:52 41.18 17 0.20																				
Grid Ref: 416.12 kmE	59.51 kmN		RMS: 0.10 secs				EBB SZ 82.9 AML 17:52 43.47 13 0.40																				
Locality: ENGLISH CHANNEL							EHH SZ 95.7 EP 17:52 32.19 0.24																				
Velocity model: Lownet Xnear: 200.0 Xfar: 500.0							PGB1 HN 107.0 ES 17:52 47.09 0.52																				
Comment: 40KM NE OF JERSEY							PGB1 HE 107.0 AML 17:52 47.44 12 0.14																				
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES							PGB1 HE 107.0 AML 17:52 47.65 13 0.24																				
JQE SZ 38.1 EP 00:21 32.11 -0.02							EAB SZ 121.0 EP 17:52 35.99 0.14																				
JQE SZ 38.1 ES 00:21 37.26 0.06							GAL1 HZ 132.0 EP 17:52 37.47 -0.08																				
JQE SZ 38.1 AML 00:21 38.21 60 0.28							GAL1 HN 132.0 ES 17:52 52.72 -0.67																				
JLP SZ 40.3 EP 00:21 32.69 0.18							GAL1 HN 132.0 AML 17:52 54.81 6 0.16																				
JLP SZ 40.3 ES 00:21 37.77 -0.09							GAL1 HN 132.0 AML 17:52 55.64 9 0.34																				
JLP SZ 40.3 AML 00:21 39.82 34 0.44							LRS HZ 10.5 IP 13:57 30.27 0.13																				
JRS SE 42.0 ES 00:21 39.63 47 0.24							LRS HZ 10.5 ES 13:57 33.51 0.16																				
JSA SZ 47.4 EP C 00:21 33.58 -0.08							LRS HZ 10.5 AML 13:57 34.13 1364 0.23																				
JSA SZ 47.4 ES 00:21 39.89 0.05							LRS HZ 10.5 AML 13:57 34.19 2914 0.26																				
JSA SZ 47.4 AML 00:21 41.08 37 0.24							LICO HZ 21.6 IP C 13:57 31.53 0.11																				
JRS SZ 42.0 IP C 00:21 32.71 -0.08							LICO HZ 21.6 AML 13:57 35.35 0.23																				
March 23 2008 Time: 08:33 09.7 UTC Magnitude: 2.4 ML																											
Lat: 50.368N	Lon:	-6.026W		Depth:	7.4 km		LICO HE 21.6 AML 13:57 35.57 307 0.14																				
Grid Ref: 113.75 kmE	59.83 kmN		RMS: 0.10 secs				LICO HE 21.6 AML 13:57 35.59 8021 0.37																				
Locality: CELTIC SEA							LICO HE 21.6 AML 13:57 31.50 -0.05																				
Velocity model: Cornwall HZnear: 100.0 Xfar: 300.0							LICO HE 21.6 AML 13:57 34.98 -0.37																				
Comment: 40KM NW OF PENZANCE							LICO HE 21.6 AML 13:57 35.99 1701 0.20																				
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES	</																										

**TABLE 2 : PHASE DATA**

HML1	HE	195.0	AML	13:59	33.89	62	0.38		KPL	HZ	21.0	IP	C	19:51	42.77	0.23
XAL	SZ	207.0	EP	13:57	56.92		0.47		KPL	HE	21.0	ES		19:51	45.64	0.10
SWN1	HZ	229.0	EP	13:57	59.43		0.37		KPL	HE	21.0	AML		19:51	45.78	9 0.26
SWN1	HE	229.0	AML	13:58	28.47	149	0.37		KPL	HN	21.0	AML		19:51	45.80	12 0.22
SWN1	HN	229.0	AML	13:58	29.15	158	0.43		KAC	SZ	30.6	IP	D	19:51	44.28	0.21
MCH1	HZ	236.0	EP	13:57	59.35		-0.60		KAC	SZ	30.6	ES		19:51	47.73	-0.45
MCH1	HE	236.0	ES	13:58	24.71		0.24		KAR1	SZ	44.1	EP		19:51	45.85	-0.30
MCH1	HE	236.0	AML	13:58	30.87	39	0.12		MDO	SZ	65.3	EP		19:51	49.65	0.17
MCH1	HN	236.0	AML	13:58	38.92	47	0.42		MCD	SN	133.0	ES		19:52	16.40	0.84
ECK	SZ	272.0	EP	13:58	04.74		0.19		MCD	SN	133.0	AML		19:52	17.04	2 0.16
ESK	HZ	287.0	EP	13:58	05.69		-0.64		MCD	SE	133.0	AML		19:52	17.08	2 0.12
ESK	HE	287.0	AML	13:58	47.15	14	0.48									
ESK	HN	287.0	AML	13:58	53.46	16	0.28									
ESY	SZ	320.0	EP	13:58	10.12		-0.42									
EAU	SZ	342.0	EP	13:58	12.95		-0.29									
HTL	HZ	387.0	EP	13:58	17.87		-0.99									
April 24 2008																
Lat: 54.912N																
Lon: -4.217W																
Grid Ref: 257.90 kmE 559.74 kmN																
Locality: KIRKCUDBRIGHT,D & G																
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0																
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES																
GALL	HZ	32.1	EP	13:54	54.52		0.04		STNC	HZ	43.2	EP		01:37	07.36	0.10
GALL	HE	32.1	ES	13:54	58.67		-0.08		STNC	HE	43.2	ES		01:37	12.84	0.04
GALL	HN	32.1	AML	13:54	59.01	33	0.28		STNC	HE	43.2	AML		01:37	13.23	0.18
GALL	HE	32.1	AML	13:54	59.13	10	0.16		STNC	HN	43.2	EP		01:37	13.34	0.44
BWH	SZ	46.4	EP	13:54	56.67		-0.05		CWF	HZ	73.6	EP		01:37	12.13	0.13
BBO	SN	65.3	ES	13:55	07.76		0.08		CWF	HN	73.6	ES		01:37	20.23	-0.72
BBO	SE	65.3	AML	13:55	09.99	6	0.10		CWF	HN	73.6	AML		01:37	20.92	10 0.32
BBO	SN	65.3	AML	13:55	10.18	9	0.38		CWF	HE	73.6	AML		01:37	21.10	5 0.28
ECK	SZ	75.7	EP	13:55	01.46		0.18		HTR	SZ	92.8	EP		01:37	15.06	0.15
ESK	HZ	78.7	EP	13:55	01.24		-0.49		LHO	SZ	98.7	EP		01:37	16.27	0.47
ESK	HE	78.7	ES	13:55	11.02		-0.27		GHH	SZ	124.0	EP		01:37	20.37	0.84
ESK	HN	78.7	AML	13:55	13.51	10	0.80		WLF1	HZ	148.0	EP		01:37	23.17	-0.07
ESK	HE	78.7	AML	13:55	13.92	7	0.52		WLF1	HN	148.0	ES		01:37	39.76	-0.52
EAU	SZ	115.0	EP	13:55	07.55		0.20		WLF1	HN	148.0	AML		01:37	40.57	21 0.48
EBL	SZ	121.0	EP	13:55	08.93		0.57		WLF1	HE	148.0	AML		01:37	40.67	13 0.24
ESY	SZ	151.0	EP	13:55	13.03		0.40									
April 29 2008																
Lat: 62.029N																
Lon: -6.636W																
Grid Ref: 157.58 kmE 1358.49 kmN																
Locality: FAROE ISLANDS																
Velocity model: default (Lownet) Xnear: 500.0 Xfar: 1000.0																
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES																
FTO	SZ	10.1	IP	D	23:43	30.63	0.07		JRS	SZ	142.0	EP		07:03	06.30	0.17
FTO	SZ	10.1	E						JRS	SE	142.0	ES		07:03	22.71	0.00
FTO	SE	10.1	ES						JRS	SE	142.0	AML		07:03	25.51	17 0.20
FTO	SN	10.1	AML						JSA	HZ	148.0	EP	9	07:03	15.49	8.54
FTO	SE	10.1	AML						JSA	HN	148.0	ES	9	07:03	32.77	0.10
SOFL	HZ	17.8	EP						JSA	HE	148.0	AML		07:03	36.44	18 0.24
SOFL	HE	17.8	ES						JSA	HN	148.0	AML		07:03	36.68	14 0.22
SOFL	HZ	17.8	AML						DYA	HZ	290.0	EP	9	07:03	33.36	8.27
SOFL	HE	17.8	AML						DYA	HN	290.0	AML		07:04	04.19	5 0.28
May 6 2008																
Lat: 52.126N																
Lon: -3.911W																
Grid Ref: 269.20 kmE 249.29 kmN																
Locality: LAMPETER,CEREDIGION																
Velocity model: Mid Wales Xnear: 150.0 Xfar: 300.0																
Comment: 11KM E OF LAMPETER																
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES																
HTR	SZ	44.4	EP	06:25	59.14		0.17		FTO	SZ	33.3	IP	D	13:36	58.44	0.56
MCH1	HZ	64.2	EP	06:26	02.40		0.16		FTO	SZ	33.3	ES		13:36	58.48	0.54
MCH1	HE	64.2	ES	06:26	09.69		-0.58		FTO	SN	33.3	ES		13:37	03.09	
MCH1	HN	64.2	AML	06:26	10.25	109	0.13		FTO	SE	33.3	AML		13:37	04.27	67 0.32
HLM1	HZ	82.7	EP	06:26	10.28	185	0.15		SOFL	HZ	34.0	EP		13:36	57.45	-0.48
HLM1	HE	82.7	ES	06:26	15.25		-0.31		SOFL	HE	34.0	ES		13:37	02.00	-0.62
HGH	SZ	93.5	IP	D	06:26	07.18	0.10		SOFL	HE	34.0	AML		13:37	03.37	123 0.38
SBD	BN	97.4	AML	06:26	42.29	20	0.50		SOFL	HN	34.0	AML		13:37	03.81	81 0.38
SBD	BE	97.4	AML	06:26	42.92	26	0.25									
HTL	HZ	132.0	EP	06:26	12.96		-0.27									
HTL	HN	132.0	ES	06:26	29.04		-0.13									
HTL	HN	132.0	AML	06:26	30.56	46	0.20									
HTL	HE	132.0	AML	06:26	31.84	33	0.40									
WLF1	HZ	134.0	EP	06:26	13.55		0.10									
WLF1	HE	134.0	ES	06:26	29.01		-0.55									
WLF1	HN	134.0	AML	06:26	32.09	112	0.20									
WLF1	HN	134.0	AML	06:26	32.12	60	0.14									
STNC	HZ	158.0	EP	06:26	17.39		0.28									
STNC	HE	158.0	ES	06:26	36.05		0.21									
STNC	HE	158.0	AML	06:26	38.23	66	0.26		ECK	SZ	50.9	EP		03:16	10.85	0.01
STNC	HN	158.0	AML	06:26	38.61	84	0.30		XAL	SZ	52.3	EP		03:16	10.92	-0.16
SWN1	HZ	161.0	EP	06:26	16.81		-0.74		GCD	SZ	62.5	EP		03:16	12.76	0.07
SWN1	HE	161.0	AML	06:26	38.67	71	0.54		ESK	HE	66.6	EP		03:16	13.42	0.04
SWN1	HN	161.0	AML	06:26	39.09	54	0.80		ESK	HE	66.6	ES		03:16	21.17	-0.38
DYA	HZ	188.0	EP	06:26	21.69		0.53		GCD	HE	66.6	AML		03:16	24.59	15 0.10
DYA	HE	188.0	ES	06:26	43.24		0.43		ESK	HN	66.6	AML		03:16	25.02	15 0.10
DYA	HE	188.0	AML	06:26	43.89	34	0.24		GIM	SE	107.0	ES		03:16	32.70	-0.10
DYA	HN	188.0	AML	06:26	44.67	29	0.32		GIM	SE	107.0	AML		03:16	33.78	17 0.12
CWF	HZ	190.0	EP	06:26	21.82		0.47		GIM	SN	107.0	AML		03:16	34.55	21 0.10
CWF	HN	190.0	ES	06:26	43.70		0.55		GAL1	HZ	111.0	EP		03:16	20.79	0.17
CWF	HE	190.0	AML	06:26	44.49	14	0.24		GAL1	HN	111.					

TABLE 2 : PHASE DATA

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ESK	HZ	40.7	IP	C	07:29	51.54	0.07	EBL	SZ	332.0	EP	00:35	03.25	0.35			
ESK	HE	40.7	ES		07:29	56.41	-0.33	EDI	HZ	333.0	EP	00:35	03.44	0.39			
ESK	HE	40.7	AML		07:29	57.28	5 0.50	EDI	HN	333.0	ES	00:35	37.10	0.54			
ESK	HN	40.7	AML		07:29	58.33	3 0.20	EDI	HN	333.0	AML	00:35	54.37	10 0.36			
ECK	SZ	53.1	EP		07:29	53.76	0.36	EDI	HE	333.0	AML	00:35	57.47	7 0.64			
June 23 2008 Time: 06:37 52.7 UTC Magnitude: 2.1 ML																	
Lat: 58.128N Lon: -3.078W	Depth: 6.9 km	RMS: 0.40 secs	EAKB10	SZ	357.0	EP	00:35	05.92						0.11			
Grid Ref: 336.52 kME 915.92 kmN			EAKB9	SZ	358.0	EP	00:35	06.03						-0.13			
Locality: MORAY FIRTH			EAKR9	SZ	358.0	EP	00:35	06.05						-0.12			
Velocity model: Lownet Xnear: 100.0 Xfar: 300.0			EAKR10	SZ	358.0	EP	00:35	05.98						-0.12			
Comment: 30KM E OF HELMSDALE			EAKR7	SZ	359.0	EP	00:35	06.15						-0.14			
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES	EAKR8	SZ	359.0	EP	00:35	06.09								-0.14			
ORE SZ 61.6 IP C 06:38 03.29	EAKB8	SZ	359.0	EP	00:35	06.18								-0.06			
ORE SN 61.6 ES 06:38 10.48	EAKR6	SZ	360.0	EP	00:35	06.26								-0.10			
ORE SE 61.6 AML 06:38 10.77	EAKR5	SZ	360.0	EP	00:35	06.34								-0.07			
ORE SN 61.6 AML 06:38 12.57	EAKB7	SZ	360.0	EP	00:35	06.13								-0.21			
MCD SZ 61.6 EP 06:38 03.11	EAKB6	SZ	360.0	EP	00:35	06.26								-0.16			
MCD SE 61.6 ES 06:38 10.47	EAKR3	SZ	361.0	EP	00:35	06.48								-0.07			
MCD SN 61.6 AML 06:38 14.76	EAKR4	SZ	361.0	EP	00:35	06.37								-0.11			
MCD SE 61.6 AML 06:38 14.84	EAKB5	SZ	361.0	EP	00:35	06.42								-0.09			
MVH1 SZ 69.1 EP 06:38 04.15	EAKB4	SZ	362.0	EP	00:35	06.25								-0.35			
MME1 SZ 90.8 EP 06:38 07.73	EAKR1	SZ	362.0	EP	00:35	06.58								-0.10			
MDO SZ 108.0 EP 06:38 10.57	EAKR2	SZ	362.0	EP	00:35	06.41								-0.20			
RSC SZ 125.0 EP 06:38 12.87	EAKB2	SZ	363.0	EP	00:35	06.65								-0.13			
GVIE BZ 145.0 EP 06:38 16.80	EAKB3	SZ	363.0	EP	00:35	06.45								-0.25			
GVIE BE 145.0 ES 06:38 32.57	EAKR5	HN	365.0	EP	00:35	06.82								-0.19			
KAC SZ 149.0 EP 06:38 17.30	EAKR6	HN	365.0	AML	00:35	43.62								0.20			
RRR SE 164.0 ES 06:38 37.11	EAKS	HE	365.0	AML	00:35	46.31	3 0.22										
RRR SN 164.0 AML 06:38 42.31	ECK	SZ	369.0	EP	00:35	07.82								0.28			
RRR SE 164.0 AML 06:38 46.82	EAKR1	SZ	380.0	EP	00:35	08.63								-0.29			
KPL HZ 177.0 EP 06:38 21.10	EAKB1	SZ	380.0	EP	00:35	09.95								0.47			
KPL HE 177.0 ES 06:38 41.00	EAKR2	HZ	397.0	EP	00:35	10.38								-0.64			
KPL HN 177.0 AML 06:38 46.74	EAKB1	HZ	413.0	EP	00:35	12.99								-0.02			
KPL HE 177.0 AML 06:38 47.98	EAKB1	HZ	413.0	ES	00:35	54.17								0.37			
EAB SZ 229.0 EP 06:38 26.48	EAKB1	HN	413.0	AML	00:35	55.66	6 0.20										
EDI HE 246.0 AML 06:39 10.60	EAKB1	HN	413.0	AML	00:35	56.96	5 0.54										
EDI HN 246.0 AML 06:39 12.49	GAL1	HZ	473.0	EP	00:35	20.67								0.24			
PGB1 HE 272.0 AML 06:39 14.66	GAL1	HN	473.0	ES	00:36	07.67								0.34			
PGB1 HN 272.0 AML 06:39 21.89	GAL1	HN	473.0	AML	00:36	08.62	2 0.48										
HYA SN 530.0 ES 00:36 17.98	GAL1	HN	473.0	AML	00:36	09.32	4 0.24										
June 24 2008 Time: 23:31 31.5 UTC Magnitude: 1.9 ML																	
Lat: 58.506N Lon: -4.968W	Depth: 4.3 km	RMS: 0.40 secs	June 30 2008 Time: 09:00 33.5 UTC Magnitude: 1.4 ML														
Grid Ref: 227.10 kME 961.32 kmN			Lat: 56.015N Lon: -3.995W	Depth: 4.5 km	RMS: 0.30 secs												
Locality: KINLOCHBERVIE, HIGHLAND			Grid Ref: 275.65 kME 682.02 kmN														
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0			Locality: DENNY, FALKIRK														
Comment: 13KM S OF CAPE WRATH			Velocity model: Lownet Xnear: 100.0 Xfar: 200.0														
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES	EAKB1	SZ	28.8	EP	09:00	39.04	0.12										
RSC SZ 21.1 IP D 23:31 35.50	EAKB1	HZ	38.0	EP	09:00	40.48	0.03										
ORE SZ 70.4 EP 23:31 43.47	EAKB1	SN	38.0	ES	09:00	45.11									-0.41		
ORE SN 70.4 ES 23:31 51.70	EAKB1	HE	38.0	AML	09:00	46.73	46 0.52										
ORE SE 70.4 AML 23:31 56.07	EAKB1	HN	38.0	AML	09:00	54.40	51 0.60										
ORE SE 70.4 AML 23:31 55.79	EAKB1	SZ	39.1	EP	09:00	40.20								-0.45			
MVH1 SZ 79.5 IP D 23:31 44.78	EAKB1	HZ	39.9	EP	09:00	40.68								-0.10			
RRR SZ 87.5 EP 23:31 46.10	EAKB1	SZ	53.7	EP	09:00	43.00								0.05			
RRR SE 87.5 ES 23:31 55.96	EAKB1	HZ	65.3	EP	09:00	44.23								-0.50			
RRR SN 87.5 AML 23:31 58.99	EAKB1	SN	66.9	EP	09:00	48.51								0.45			
RRR SE 87.5 AML 23:31 59.36	EAKB1	HE	92.2	EP	09:00	49.18								0.31			
KAC SZ 114.0 EP 23:31 50.11	EAKB1	HZ	108.0	EP	09:00	51.36								0.08			
RRH SZ 120.0 EP 23:31 51.06	EAKB1	HN	136.0	EP	09:00	56.03								0.55			
MDO SZ 124.0 EP 23:31 52.12	EAKB1	HZ	136.0	EP	09:00	12.05								0.53			
KPL HZ 136.0 EP 23:31 54.08	EAKB1	HN	136.0	ES	09:01	12.35											
KPL HE 136.0 ES 23:32 09.93	EAKB1	HE	136.0	AML	09:01	13.82	4 0.36										
KPL HN 136.0 AML 23:32 12.12	EAKB1	HN	136.0	AML	09:01	13.82	9 0.34										
MCD SZ 144.0 EP 23:32 11.18	EAKB1	SZ	101.0	EP	09:14	21.08								-0.12			
MCD SN 144.0 AML 23:32 11.86	EAKB1	HZ	106.0	EP	09:14	22.04								0.26			
MCD SE 144.0 AML 23:32 12.83	EAKB1	SN	107.0	EP	09:14	22.04								-0.02			
KSB SZ 147.0 EP 23:31 55.54	EAKB1	HE	107.0	ES	09:14	34.56											
MME1 SZ 178.0 EP 23:32 00.20	EAKB1	HZ	107.0	AML	09:14	36.00											
EAB SZ 261.0 EP 23:32 10.41	EAKB1	HN	107.0	AML	09:14	36.60	22 0.22										
July 2 2008 Time: 03:14 04.7 UTC Magnitude: 1.5 ML																	
Lat: 53.353N Lon: -0.325W	Depth: 19.3 km	RMS: 0.10 secs	July 2 2008 Time: 10:37 19.0 UTC Magnitude: 2.1 ML														
Grid Ref: 511.48 kME 385.35 kmN			Lat: 52.101N Lon: -3.406W	Depth: 8.4 km	RMS: 0.30 secs												
Locality: MARKET RASEN, LINCS			Locality: BUILTH WELLS, POWYS														
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0			Velocity model: Mid Wales Xnear: 150.0 Xfar: 300.0														
STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES	EAKB1	SZ	9.8	IP	10:37	21.77											
PGB1 HE 51.7 AML 14:23 52.04	EAKB1	HZ	30.2	IP	10:37	24.36											
PGB1 HN 51.7 AML 14:23 54.03	EAKB1	SN	30.2	ES	10:37	28.19											
ESK HZ 57.8 EP 14:23 45.70	EAKB1	HE	30.2	AML	10:37	28.38	188 0.22										
ESK HE 57.8 AML 14:23 53.02	EAKB1	HZ	30.2	AML	10:37	28.40	326 0.28										
ESK HE 57.8 AML 14:23 59.76	EAKB1	SN	30.2	ES	10:37	59.20											
EAK SZ 64.6 EP 14:23 46.97	EAKB1	HE	144.0	AML	10:38	00.19	28 0.60										
ECK SZ 66.6 EP 14:23 47.03	EAKB1	HZ	144.0	AML	10:38	02.73	15 0.42										
GALL HZ 70.9 EP 14:23 47.70	EAKB1	SN	147.0	EP	10:37	36.24											
GALL HE 70.9 AML 14:23 56.94	EAKB1	HE	147.0	EP	10:37	42.44											-0.38
GALL HN 70.9 AML 14:23 58.26	EAKB1	HZ	147.0	EP	10:37	44.67											0.06
EBL SZ 78.7 EP 14:23 48.89	EAKB1	SN	147.0	IP	10:37	48.40											-0.02
EDI HE 82.0 AML 14:24 01.53	EAKB1	HE	147.0	IP	10:37	50.95											0.04
EDI HN 82.0 AML 14:24 03.75	EAKB1	HZ	147.0	IP	10:37	52.20</td											

TABLE 2 : PHASE DATA

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Locality: LINCOLN, LINCOLNSHIRE												Grid Ref: 333.02 kmE 914.53 kmN												RMS: 0.20 secs											
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0												Velocity model: Lownet Xnear: 100.0 Xfar: 300.0																							
Comment: 11KM NNW OF LINCOLN												Comment: 30KM E OF HELMSDALE																							
KBII	SZ	61.1	EP		04:38	14.73					-0.03	MCD	SZ	59.6	IP	D	16:30	55.12							0.02										
CWF	HZ	80.0	EP		04:38	17.39					-0.28	MCD	SE	59.6	ES		16:31	02.15							-0.35										
CWF	HN	80.0	ES		04:38	27.29					-0.08	MCD	SN	59.6	AML		16:31	02.90	7	0.64															
CWF	HN	80.0	AML		04:38	28.65	14	0.20				MCD	SZ	59.6	AML		16:31	08.04	8	0.30															
CWF	HE	80.0	AML		04:38	29.21	13	0.18				ORE	SZ	60.6	EP		16:30	55.29							0.08										
LHO	EZ	85.7	EP		04:38	18.90					0.30	ORE	SE	60.6	ES		16:31	02.47							-0.23										
KWE	SZ	88.6	EP		04:38	19.34					0.30	ORE	SN	60.6	AML		16:31	06.83	10	0.44															
HPK	HZ	96.8	EP		04:38	20.38					0.09	ORE	SE	60.6	AML		16:31	06.96	9	0.26															
HPK	HN	96.8	ES		04:38	31.59					-0.30	MVH1	SZ	65.3	EP		16:30	56.09							0.13										
HPK	HN	96.8	AML		04:38	32.41	18	0.14				MME1	SZ	89.7	EP		16:30	59.92							0.13										
HPK	HE	96.8	AML		04:38	32.91	25	0.24				MDO	SZ	105.0	EP		16:31	02.33							0.23										
August 22 2008 Time: 23:30 52.0 UTC Magnitude: 1.2 ML												August 30 2008 Time: 19:33 19.0 UTC Magnitude: 1.6 ML																							
Lat: 56.562N	Lon: -5.247W					Depth: 5.6 km						Lat: 53.652N	Lon: -3.156W				Depth: 4.7 km																		
Grid Ref: 200.50 kmE 745.82 kmN	RMS: 0.50 secs											Grid Ref: 323.60 kmE 417.92 kmN	RMS: 0.60 secs																						
Locality: PORT APPIN, ARGYLL/BUTE												Locality: IRISH SEA																							
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0												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		STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	
KAR1	SZ	53.3	EP		23:31	00.81				-0.45	WPM1	SZ	66.3	EP		19:33	29.64							KAR1	SZ	71.5	EP		04:03	05.07					
EAB	SZ	69.9	EP		23:31	03.93				0.09	WME	SZ	81.2	EP		19:33	32.33							EAB	SZ	105.0	EP		04:03	07.8					
GQUA	SZ	72.6	EP		23:31	03.59				-0.74	LHO	EZ	86.9	EP		19:33	33.10							GQUA	SZ	105.0	EP		04:03	03.6					
KSB	SZ	72.9	EP		23:31	04.30				-0.04	WLF1	HZ	91.7	EP		19:33	34.07							KSB	SZ	105.0	EP		04:03	05.4					
GVIE	BZ	73.2	EP		23:31	03.86				-0.58	WLF1	HN	91.7	ES		19:33	45.90							GVIE	BZ	91.7	EP		04:03	04.5					
GTRA	SZ	74.1	EP		23:31	03.90				-0.66	WLF1	HN	91.7	AML		19:33	49.04	22	0.46					GTRA	SZ	91.7	EP		04:03	04.4					
KPL	HZ	90.0	EP		23:31	07.10				0.20	WLF1	HE	91.7	AML		19:33	50.45	20	0.16					KPL	HZ	91.7	EP		04:03	04.4					
KPL	HE	90.0	ES		23:31	18.20				0.40	YRC	SZ	104.0	EP		19:33	36.69							KPL	HE	91.7	EP		04:03	03.2					
KPL	HE	90.0	AML		23:31	20.57	7	0.38			HPK	HZ	107.0	EP		19:33	36.95							KPL	HE	91.7	EP		04:03	03.4					
KPL	HN	90.0	AML		23:31	21.13	7	0.24			HPK	HN	107.0	ES		19:33	49.81							KPL	HN	107.0	EP		04:03	02.6					
ELO	SZ	95.1	EP		23:31	08.28				0.48	HPK	HE	107.0	AML		19:33	54.17	36	0.68					ELO	SZ	107.0	EP		04:03	02.6					
PGB1	HZ	96.1	EP		23:31	07.99				0.11	HPK	HN	107.0	AML		19:33	54.23	36	0.68					PGB1	HZ	107.0	EP		04:03	02.6					
PGB1	HE	96.1	ES		23:31	19.06				-0.44	HPK	HN	107.0	AML		19:33	37.04							PGB1	HE	107.0	EP		04:03	02.6					
PGB1	HE	96.1	AML		23:31	21.17	9	0.28			KWE	SZ	113.0	EP		19:33	38.39							PGB1	HE	107.0	EP		04:03	02.6					
PGB1	HN	96.1	AML		23:31	21.92	6	0.34			WIM	SZ	114.0	EP		19:33	38.86							PGB1	HE	107.0	EP		04:03	02.6					
KAC	SZ	104.0	EP		23:31	09.73				0.56	KBI1	SZ	117.0	EP		19:33	44.03							KAC	SZ	117.0	EP		04:03	02.6					
MDO	SZ	112.0	EP		23:31	10.87				0.53	CWF	HZ	160.0	EP		19:33	44.09							MDO	SZ	117.0	EP		04:03	02.6					
EBH	SZ	113.0	EP		23:31	11.43				0.90	CWF	HE	160.0	ES		19:34	02.71							EBH	SZ	117.0	EP		04:03	02.6					
EDI	HE	146.0	ES		23:31	32.57				0.07	CWF	HE	160.0	AML		19:34	03.87	5	0.20					EDI	HE	146.0	ES		04:03	02.6					
EDI	HN	146.0	AML		23:31	34.97	4	0.18			CWF	HE	160.0	AML		19:34	05.18	6	0.32					EDI	HN	146.0	AML		04:03	02.6					
MCD	SE	166.0	AML		23:31	41.76	6	0.34			ECK	SZ	160.0	AML		19:34	05.49	3	0.18					MCD	SE	166.0	AML		04:03	02.6					
MCD	SN	166.0	AML		23:31	41.96	4	0.18			ECK	HE	185.0	EP		19:33	49.04	10	0.36					MCD	SN	166.0	AML		04:03	02.6					
August 23 2008 Time: 12:52 30.1 UTC Magnitude: 2.8 ML												September 5 2008 Time: 05:02 15.1 UTC Magnitude: 1.1 ML																							
Lat: 59.992N	Lon: 4.881W					Depth: 10.0 km					Lat: 55.098N	Lon: -3.161W				Depth: 8.0 km								Lat: 59.992N	Lon: 4.881W				Depth: 10.0 km						
Grid Ref: 783.40 kmE 1142.93 kmN	RMS: 0.30 secs										Grid Ref: 296.89 kmE 579.37 kmN	RMS: 0.50 secs												Grid Ref: 240.06 kmE -90.13 kmN	RMS: 0.40 secs										
Locality: SOUTHERN NORWAY												Locality: DUMFRIES, D & G																							
Velocity model: North Sea Xnear: 500.0 Xfar: 1000.0												Velocity model: Borders Xnear: 100.0 Xfar: 200.0																							
Comment: 340km E of LERWICK												Comment: 3KM NNW OF DUMFRIES												Comment: 340km E of LERWICK											
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES		STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES		STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	
CCL1	HZ	145.0	EP		23:54	52.50				0.19																									

**TABLE 2 : PHASE DATA**

KPL	HZ	120.0	EP	04:03	12.42	-0.27	Velocity model: Lownet Xnear: 200.0 Xfar: 500.0			
KPL	HE	120.0	ES	04:03	26.82	-0.17	Comment: 125KM W OF JERSEY			
KPL	HN	120.0	AML	04:03	29.77	6 0.12	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES			
KPL	HE	120.0	AML	04:03	29.80	9 0.18	JSA HZ 127.0 EP 05:24 11.71 -0.41			
GQUA	SZ	127.0	EP	04:03	14.08	0.05	JSA HN 127.0 ES 05:24 26.48 -0.64			
GVIE	BZ	128.0	EP	04:03	13.18	-0.92	JSA HN 127.0 AML 05:24 27.77 19 0.30			
GVIE	BE	128.0	ES	04:03	29.57	0.16	JSA HE 127.0 AML 05:24 28.94 19 0.38			
GPIP	SZ	129.0	EP	04:03	15.26	0.92	JLP SZ 133.0 EP 05:24 13.05 0.14			
GTRA	SZ	129.0	EP	04:03	14.45	0.20	JRS SZ 133.0 EP 05:24 12.86 -0.09			
KSK	SZ	138.0	EP	04:03	15.66	0.20	JRS SE 133.0 ES 05:24 29.19 0.62			
KAC	SZ	142.0	EP	04:03	16.00	-0.09	JQE SZ 137.0 EP 05:24 13.90 0.38			
EBH	SZ	156.0	EP	04:03	18.44	0.34	HTL HZ 212.0 EP 05:24 23.45 -0.01			
MDO	SZ	164.0	EP	04:03	19.23	0.01	HTL HN 212.0 AML 05:24 45.89 7 0.82			
RRR	SZ	176.0	EP	04:03	20.67	-0.06	HTL HE 212.0 AML 05:24 50.39 7 0.54			
RRR	SN	176.0	ES	04:03	40.93	0.03				
RRR	SE	176.0	AML	04:03	42.61	4 0.26				
RRR	SN	176.0	AML	04:03	43.57	3 0.24				
EDI	HE	181.0	AML	04:03	45.64	4 0.62				
EDI	HN	181.0	AML	04:03	46.66	4 0.48				
September 10 2008				Time: 15:05	50.6 UTC	Magnitude: 1.4 ML	Velocity model: Lownet Xnear: 200.0 Xfar: 500.0			
Lat: 51.846N				Lat: -3.416W		Depth: 14.1 km	Comment: 150KM ENE OF JERSEY			
Grid Ref: 302.47						RMS: 0.20 secs	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES			
Locality: BRECON, POWYS							JQE SZ 150.0 IP 08:31 51.26 0.00			
Velocity model: Mid Wales Xnear: 100.0 Xfar: 200.0							JRS SZ 154.0 EP 08:31 51.75 -0.08			
Comment: 11KM SSW OF BRECON							JRS SE 154.0 ES 08:32 09.40 -0.08			
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES
HTR	SZ	27.8	IP	C	15:05	56.26	0.14	JRS SE 154.0 AML 08:32 13.03 47 0.22		
MCH1	HZ	33.3	IP	C	15:05	57.12	0.24	JLP SZ 154.0 EP 08:31 51.96 0.17		
MCH1	HN	33.3	ES		15:06	01.13	-0.30	JSA SZ 160.0 EP 08:31 52.86 0.21		
MCH1	HE	33.3	AML		15:06	01.98	61 0.32	JSA HN 160.0 AML 08:32 10.88 -0.02		
MCH1	HN	33.3	AML		15:06	02.42	52 0.16	JSA HE 160.0 AML 08:32 13.28 39 0.26		
HBL2	HZ	34.5	EP		15:05	57.14	0.05	MCH1 HZ 351.0 EP 08:32 16.21 -0.40		
HBL2	HN	34.5	ES		15:06	01.66	-0.13	MCH1 HE 351.0 ES 08:32 52.91 0.56		
HGH	SZ	48.1	EP		15:05	59.24	0.18	MCH1 HN 351.0 AML 08:33 06.66 6 0.44		
HTL	HZ	120.0	EP		15:06	10.00	0.09	MCH1 HE 351.0 AML 08:33 09.61 7 0.26		
HTL	HN	120.0	ES		15:06	23.52	-0.32	HTL HZ 361.0 EP 08:32 17.77 -0.05		
HTL	HE	120.0	AML		15:06	25.48	8 0.24	HTL HE 361.0 AML 08:33 15.10 7 0.24		
HTL	HN	120.0	AML		15:06	28.84	9 0.64	HTL HN 361.0 AML 08:33 18.86 10 0.50		
CWF	HE	175.0	ES		15:06	35.72	-0.56			
CWF	HN	175.0	AML		15:06	36.22	8 0.20			
CWF	HE	175.0	AML		15:06	36.95	4 0.18			
September 12 2008				Time: 14:07	06.1 UTC	Magnitude: 1.3 ML	Velocity model: Lownet Xnear: 75.0 Xfar: 150.0			
Lat: 55.408N				Lat: -4.242W		Depth: 7.1 km	Comment: 175KM ENE OF JERSEY			
Grid Ref: 258.07						RMS: 0.40 secs	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES			
Locality: CUMNOCK, EAST AYRSHIRE							KSB SZ 7.4 IP 20:04 56.62 0.09			
Velocity model: Lownet Xnear: 100.0 Xfar: 200.0							KSB SZ 7.4 ES 20:04 57.75 -0.09			
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES
BWH	SZ	45.4	EP		14:07	14.33	0.03	KPL HZ 14.7 IP 20:04 57.90 0.20		
GCD	SZ	63.7	EP		14:07	17.03	-0.12	KPL HE 14.7 AML 20:04 59.91 71 0.24		
ESK	HN	66.5	EP		14:07	16.80	-0.81	KAC SZ 34.2 IP D 20:05 01.04 0.01		
ESK	HN	66.5	ES		14:07	25.51	-0.50	KAR1 SZ 37.9 EP 20:05 01.62 -0.05		
ESK	HE	66.5	AML		14:07	30.62	6 0.32			
ESK	HN	66.5	AML		14:07	31.69	8 0.38			
GAL1	HZ	67.4	EP		14:07	17.40	-0.31			
GAL1	HN	67.4	ES		14:07	25.98	-0.21			
GAL1	HE	67.4	AML		14:07	27.44	11 0.54			
GAL1	HN	67.4	AML		14:07	28.73	11 0.50			
EAU	SZ	69.8	EP		14:07	17.80	-0.33			
ECK	SZ	75.1	EP		14:07	18.89	-0.06			
EBL	SZ	85.7	EP		14:07	20.82	0.21			
EAB	SZ	87.1	EP		14:07	21.21	0.41			
EDI	HN	87.7	AML		14:07	32.06	14 0.52			
EDI	HE	87.7	AML		14:07	32.44	10 0.64			
BBO1	SZ	98.1	EP		14:07	22.59	0.09			
BBO1	SE	98.1	ES		14:07	34.64	0.16			
BBO1	SN	98.1	AML		14:07	38.67	23 0.42			
BBO1	SE	98.1	AML		14:07	39.26	22 0.36			
KESW	HZ	117.0	EP		14:07	26.08	0.69			
KESW	HE	117.0	ES		14:07	40.32	0.84			
KESW	HN	117.0	AML		14:07	42.84	11 0.38			
KESW	HE	117.0	AML		14:07	43.52	16 0.38			
ESY	SZ	117.0	EP		14:07	26.03	0.57			
September 18 2008				Time: 21:01	03.1 UTC	Magnitude: 1.2 ML	Velocity model: Lownet Xnear: 300.0 Xfar: 300.0			
Lat: 51.037N				Lat: -2.870W		Depth: 4.5 km	Comment: 30KM E OF HELMSDALE			
Grid Ref: 339.01						RMS: 0.50 secs	STAT CO DIST PHAS WT P HrMn SECS AMPL PERI RES			
Locality: BRIDGWATER, SOMERSET							MCD SZ 55.4 IP C 20:46 41.48 -0.12			
Velocity model: Lownet Xnear: 150.0 Xfar: 300.0							MCD SN 55.4 ES 20:46 48.49 -0.08			
Comment: FELT BRIDGWATER							MCD SE 55.4 AML 20:46 53.02 228 0.54			
Intensity: 2							MCD SN 55.4 AML 20:46 54.34 226 0.30			
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES
HEX	SZ	65.5	EP		21:01	14.23	0.06	MVH1 SZ 61.7 IP D 20:46 42.64 0.10		
HGH	SZ	67.0	EP		21:01	14.24	-0.17	MME1 SZ 86.1 IP C 20:46 46.09 -0.28		
SWN1	HZ	91.5	EP		21:01	17.72	-0.49	MDO SZ 100.0 IP C 20:46 48.94 0.46		
SWN1	HN	91.5	ES		21:01	30.04	0.83	GQUA SZ 137.0 EP 20:46 54.69 0.85		
SWN1	HN	91.5	AML		21:01	31.09	14 0.45	KAC SZ 142.0 EP 20:46 54.13 -0.24		
SWN1	HE	91.5	AML		21:01	31.22	14 0.60	KSB SZ 165.0 EP 20:46 56.91 -0.74		
DYA	HZ	100.0	EP		21:01	19.04	-0.57	KPL HZ 169.0 EP 20:46 57.38 -0.64		
DYA	HN	100.0	ES		21:01	31.13	-0.50	KPL HN 169.0 ES 20:47 16.37 -0.60		
DYA	HN	100.0	AML		21:01	32.80	6 0.30	KPL HE 169.0 AML 20:47 21.57 24 0.56		
DYA	HE	100.0	AML		21:01	32.99	7 0.36	KPL HE 169.0 EP 20:47 24.87 30 0.40		
MCH1	HZ	107.0	EP		21:01	21.03	0.39	ELO SZ 182.0 EP 20:47 00.10 0.33		
MCH1	HE	107.0	ES		21:01	32.80	-0.62	KAR1 SZ 205.0 EP 20:47 03.29 0.75		
MCH1	HE	107.0	AML		21:01	34.22	9 0.46	EBH SZ 205.0 EP 20:47 02.90 0.29		
MCH1	HN	107.0	AML		21:01	34.24	6 0.28	EAB SZ 222.0 EP 20:47 04.67 -0.03		
HTL	HZ	113.0	EP		21:01	22.18	0.60	EDB SZ 240.0 EP 20:47 06.50 -0.45		
HTL	HE	113.0	ES		21:01	35.77	0.73	EDB HE 240.0 ES 20:47 32.94 0.53		
HTL	HE	113.0	AML		21:01	37.49	4 0.34	EDB HE 240.0 AML 20:47 45.45 79 0.48		
HTL	HN	113.0	AML		21:01	38.76	6 0.22	EDB HE 240.0 EP 20:47 45.82 57 0.54		
HBL2	HE	113.0	ES		21:01	34.71	-0.44			
HBL2	HE	113.0	EP		21:01	22.69	0.18			
September 19 2008				Time: 05:23	51.6 UTC	Magnitude: 1.8 ML	October 6 2008 Time: 00:36 51.1 UTC Magnitude: 1.5 ML			
Lat: 49.123N				Lat: -3.912W		Depth: 6.9 km	Lat: 56.225N Lon: -3.743W			
Grid Ref: 260.51						RMS: 0.40 secs	Grid Ref: 291.94 kmE 704.96 kmN			
Locality: ENGLISH CHANNEL							Locality: BLACKFORD, PERTH/KINROS			
							Velocity model: Lownet Xnear: 75.0 Xfar: 150.0			
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES
EBH	SZ	14.8	IP	C	00:36	54.21	0.08			
ELO	SZ	27.4	EP		00:36	55.86	-0.44			
EAB	SZ	37.1	IP	C	00:36	57.75	-0.14			
EDB	SZ	46.1	EP		00:36	59.65	0.22			
EDB	HZ	48.2	EP		00:36	59.16	-0.55			

**TABLE 2 : PHASE DATA**

EDI	HE	48.2	ES	00:37	05.52	-0.48	SUE	SZ	219.0	ES	02:24	38.72	0.02								
EDI	HN	48.2	AML	00:37	09.43	8 0.18	SUE	SZ	219.0	AML	02:24	40.39	176 0.31								
EDI	HE	48.2	AML	00:37	11.83	9 0.37	HYA	SZ	275.0	EP	02:24	24.95	2.76								
PGB1	HZ	65.2	EP	00:37	02.41	0.05	HYA	SN	275.0	ES	02:24	53.00	2.41								
PGB1	HE	65.2	ES	00:37	10.53	-0.06	HYA	SZ	275.0	AML	02:25	01.28	153 0.36								
PGB1	HN	65.2	AML	00:37	13.80	16 0.34	ASK	EZ	282.0	EP	02:24	23.35	0.19								
PGB1	HE	65.2	AML	00:37	15.31	17 0.34	ASK	EZ	282.0	ES	02:24	52.79	0.54								
EBL	SZ	66.6	EP	00:37	03.28	0.65	LRW	HZ	287.0	EP	02:24	25.34	1.60								
ESY	SZ	78.2	EP	00:37	04.83	0.43	LRW	HN	287.0	AML	02:24	53.98	0.72								
ESK	HZ	107.0	EP	00:37	09.06	0.27	LRW	HE	287.0	ES	02:25	56.59	217 0.60								
ESK	HN	107.0	ES	00:37	21.19	-0.53	RUND	EZ	294.0	EP	02:24	24.87	-0.52								
ESK	HE	107.0	AML	00:37	24.29	19 0.18	RUND	EZ	294.0	ES	02:24	54.23	-0.27								
ESK	HN	107.0	AML	00:37	24.68	16 0.24	RUND	EZ	294.0	AML	02:24	57.06	108 0.28								
GQUA	SZ	108.0	EP	00:37	09.28	0.14	EGD	EZ	301.0	EP	02:24	25.76	0.33								
GPIP	SZ	108.0	EP	00:37	09.62	0.58	EGD	EZ	301.0	ES	02:24	55.55	-0.63								
ECK	SZ	122.0	EP	00:37	12.37	1.10	KMY	HN	308.0	EP	02:24	27.32	1.03								
MME1	SZ	130.0	EP	00:37	12.49	-0.04	MOL	HN	308.0	ES	02:24	58.29	0.61								
MDO	SZ	141.0	EP	00:37	14.40	0.41	MOL	HZ	308.0	AML	02:25	05.95	138 0.40								
MCD	SZ	154.0	EP	00:37	16.00	0.11	ODD1	SZ	382.0	EP	02:24	37.23	1.63								
MCD	SE	154.0	ES	00:37	33.41	-0.59	ODD1	SN	382.0	ES	02:25	14.93	1.15								
MCD	SE	154.0	AML	00:37	35.60	24 0.16	ODD1	SZ	382.0	AML	02:25	16.56	168 0.37								
MCD	SN	154.0	AML	00:37	36.36	18 0.10	KMY	IP	401.0	EP	02:24	38.72	0.81								
GALL	HZ	163.0	EP	00:37	17.78	0.64	KMY	SE	401.0	ES	02:25	17.77	0.00								
GALL	HE	163.0	ES	00:37	36.93	0.78	BLS5	HZ	418.0	EP	02:24	41.41	1.40								
GALL	HE	163.0	AML	00:37	38.34	13 0.50	BLS5	HN	418.0	ES	02:25	21.42	0.01								
GALL	HN	163.0	AML	00:37	38.39	11 0.52	BLS5	HZ	418.0	AML	02:25	22.76	127 0.16								
KPL	HZ	170.0	EP	00:37	18.54	0.39	STAV	SZ	440.0	EP	02:24	43.58	0.85								
KPL	HN	170.0	ES	00:37	37.68	-0.23	STAV	SE	440.0	ES	02:25	26.19	0.08								
KPL	HN	170.0	AML	00:37	39.66	5 0.46	STAV	SZ	440.0	AML	02:25	27.28	99 0.24								
KPL	HE	170.0	AML	00:37	40.87	7 0.50	KONO	BZ	525.0	EP	02:24	55.03	1.68								
October 10 2008 Time: 04:28 39.3 UTC				Magnitude: 3.5 ML																	
Lat: 56.833N Lon: -5.525W				Depth: 12.7 km																	
Grid Ref: 184.98 kmE 776.80 kmN				RMS: 0.50 secs																	
Locality: GLENFINNAN, HIGHLAND																					
Velocity model: Lownet Xnear: 100.0 Xfar: 300.0																					
Comment: FELT GLENFINNAN...				Intensity: 4																	
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES	NSS	BZ	571.0	EP							
KAR1	SZ	20.8	IP	C	04:28	43.05		-0.53			NSS	BN	571.0	ES							
KSB	SZ	42.4	IP	C	04:28	46.76		-0.09			NSS	BZ	571.0	AML							
KPL	HZ	56.9	IP	C	04:28	49.16		0.17			MVH1	SZ	587.0	EP							
KPL	HN	56.9	ES		04:28	56.07		-0.01			MCD	SZ	595.0	EP							
KPL	HE	56.9	AML		04:29	00.53	2286	0.10			MCD	SE	595.0	ES							
KPL	HN	56.9	AML		04:29	00.80	1191	0.10			MCD	SE	595.0	AML							
GQUA	SZ	65.9	EP		04:28	49.87		-0.63			MME1	SZ	615.0	EP							
GVIE	BZ	65.9	EP		04:28	50.74		0.23			MDO	SZ	639.0	EP							
GVIE	BE	65.9	ES		04:28	58.10		-0.60			KAC	SZ	662.0	EP							
GTRA	SZ	67.2	EP		04:28	49.98		-0.72			KPL	HZ	689.0	EP							
GPIP	SZ	68.2	EP		04:28	52.09		1.22			KPL	HE	689.0	AML							
KAC	SZ	75.4	EP		04:28	52.27		0.39			KPL	HN	689.0	AML							
MDO	SZ	97.6	EP		04:28	55.81		0.47			STOK	EZ	707.0	EP							
KSK	SZ	100.0	IP	C	04:28	55.85		0.19			STOK	EE	707.0	ES							
EAB	SZ	102.0	IP	C	04:28	56.33		0.32			STOK	EZ	707.0	AML							
RRR	SZ	115.0	EP		04:28	58.03		0.23			STOK	EE	707.0	EP							
RRR	SE	115.0	ES		04:29	10.98		-0.34			KONS	EZ	722.0	ES							
RRR	SE	115.0	AML		04:29	14.53	1072	0.34			KONS	EZ	722.0	AML							
RRR	SN	115.0	AML		04:29	15.12	819	0.30			EHH	SZ	738.0	EP							
ELO	SZ	118.0	EP		04:28	58.90		0.57			ESY	SZ	754.0	EP							
PGB1	HZ	131.0	EP		04:29	00.08		0.05			EAB	SZ	763.0	EP							
PGB1	HN	131.0	ES		04:29	14.82		-0.36			EDF	HN	765.0	EP							
PGB1	HE	131.0	AML		04:29	18.52	1807	0.35			EDF	HN	765.0	ES							
PGB1	HN	131.0	AML		04:29	18.99	1357	0.49			EDF	HE	765.0	AML							
RRH	SZ	140.0	EP		04:29	01.56		0.26			EDF	HN	765.0	EP							
EBH	SZ	140.0	EP		04:29	01.77		0.36			MOR8	SZ	771.0	EP							
MVH1	SZ	146.0	IP	D	04:29	01.74		-0.46			MOR8	SN	771.0	ES							
MCD	SZ	161.0	EP		04:29	04.06		-0.20			EBL	SZ	778.0	EP							
MCD	SE	161.0	ES		04:29	22.64		0.14			EAU	SZ	778.0	EP							
MCD	SN	161.0	AML		04:29	26.57	1137	0.44			PGB1	HZ	805.0	EP							
MCD	SE	161.0	AML		04:29	33.42	1102	0.40			PGB1	HN	805.0	ES							
MME1	SZ	164.0	EP		04:29	04.41		-0.35			PGB1	HE	805.0	AML							
EAU	SZ	169.0	EP		04:29	05.59		0.25			PGB1	HN	805.0	AML							
RSC	SZ	170.0	IP	D	04:29	05.57		0.17			EKF	SZ	829.0	EP							
EDI	HZ	176.0	EP		04:29	05.34		-0.86			EKF	HN	829.0	ES							
EDI	HN	176.0	ES		04:29	26.00		0.15			EKF	HE	829.0	AML							
EDI	HE	176.0	AML		04:29	29.22	1123	0.37			EKF	HN	829.0	EP							
EDI	HN	176.0	AML		04:29	29.32	1057	0.34			EKF	HE	829.0	AML							
EBL	SZ	194.0	EP		04:29	08.76		0.33			EKF	HN	829.0	EP							
OTO	SZ	197.0	EP		04:29	08.21		-0.61			GAL1	HN	908.0	ES							
ESY	SZ	207.0	EP		04:29	10.04		0.00			GAL1	HN	908.0	AML							
ORE	SZ	218.0	EP		04:29	11.62		0.23			GAL1	HE	908.0	AML							
ORE	SN	218.0	AML		04:29	45.60	561	0.26			October 24 2008 Time: 23:21 37.3 UTC	Magnitude: 1.8 ML									
ORE	SE	218.0	AML		04:29	46.21	635	0.46			Lat: 52.742N Lon: -2.486W	Depth: 8.8 km									
ESK	HZ	222.0	EP		04:29	11.06		-0.89			Grid Ref: 367.19 kmE 316.19 kmN	RMS: 0.40 secs									
ESK	HE	222.0	AML		04:29	40.98	265	0.60			Locality: TELFORD, SHROPSHIRE										
ESK	HN	222.0	AML		04:29	43.03	286	0.18			Velocity model: Mid Wales Xnear: 100.0 Xfar: 300.0										
GALL	HZ	225.0	EP		04:29	11.82		-0.43			Comment: 10KM N of TELFORD										
GALL	HN	225.0	ES		04:29	35.55		-0.76			STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES
GALL	HN	225.0	AML		04:29	42.33	164	0.32			HLM1	HZ	36.5	IP	C	23:21	43.61	-0.43			
GALL	HE	225.0	AML		04:29	42.72	211	0.39			HLM1	HN	36.5	ES		23:21	48.96	0.09			
ECK	SZ	237.0	EP		04:29	13.64		-0.18			STNC	HZ	43.2	EP		23:21	45.37	0.25			
GCD	SZ	241.0	EP		04:29	13.80		-0.45			STNC	HE	43.2	ES		23:21	50.87	0.14			
GMM	SZ	290.0	EP		04:29	19.79		-0.64			STNC	HE	43.2	AML		23:21	51.15	94 0.19			
KESW	HZ	293.0	EP		04:29	20.44		-0.31			STNC	HN	43.2								

**TABLE 2 : PHASE DATA**

STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES
WLF1	HE	142.0	AML	23:22	18.70	28	0.26			
WLF1	HN	142.0	AML	23:22	18.70	40	0.58			
SWN1	HZ	145.0	EP	23:22	01.85		0.33			
SWN1	HN	145.0	ES	23:22	19.63		0.70			
SWN1	HN	145.0	AML	23:22	19.67	24	0.32			
SWN1	HE	145.0	AML	23:22	20.79	16	0.20			
MCH1	EZ	89.9	EP	23:21	52.77		-0.07			
October	26	2008	Time:	18:06	25.5	UTC	Magnitude:	3.5	ML	
Lat:	52.200N	Lon:	-2.633W				Depth:	5.3	km	
Grid Ref:	356.74 kmE	255.99 kmN					RMS:	0.30	secs	
Locality:	BROMYARD, HEREFORDSHIRE									
Velocity model:	Lownet	Xnear: 150.0	Xfar: 300.0							
Comment:	FELT HEREFORDSHIRE...						Intensity:	4		
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES
MCH1	EZ	33.7	IP	18:06	31.89		0.11			
MCH1	EN	33.7	ES	18:06	36.46		0.13			
MCH1	HN	33.7	AML	18:06	39.75	1741	0.21			
MCH1	HE	33.7	AML	18:06	39.84	1971	0.16			
HLM1	HZ	39.2	IP	D	18:06	32.17		-0.53		
HLM1	HE	39.2	ES		18:06	37.45		-0.48		
HLM1	HE	39.2	AML		18:06	38.23	2269	0.30		
HLM1	HN	39.2	AML		18:06	38.37	1994	0.24		
HTR	SZ	45.5	IP	C	18:06	33.82		0.16		
HGH	SZ	63.7	IP	C	18:06	36.22		-0.23		
SWN1	HZ	95.6	IP	D	18:06	41.34		-0.05		
SWN1	HE	95.6	ES		18:06	52.93		-0.03		
SWN1	HN	95.6	AML		18:06	53.74	1609	0.18		
SWN1	HE	95.6	AML		18:06	56.53	1181	0.22		
STNC	HZ	103.0	EP		18:06	42.86		0.26		
STNC	HE	103.0	ES		18:06	55.52		0.48		
STNC	HN	103.0	AML		18:06	56.06	3094	0.30		
STNC	HE	103.0	AML		18:06	58.19	3896	0.32		
KWE	SZ	105.0	EP		18:06	42.83		-0.12		
WOL	BZ	139.0	EP		18:06	47.77		-0.16		
KBI1	SZ	139.0	EP		18:06	48.06		0.05		
WOL	BE	139.0	AML		18:07	05.07	980	0.25		
WOL	BN	139.0	AML		18:07	06.40	1536	0.35		
HEX	SZ	150.0	IP	C	18:06	49.76		0.21		
WLF1	HZ	170.0	EP		18:06	52.87		0.50		
WLF1	HE	170.0	ES		18:07	12.03		0.08		
WLF1	HE	170.0	AML		18:07	14.13	1108	0.13		
WLF1	HN	170.0	AML		18:07	16.47	926	0.25		
HTL	HZ	186.0	EP		18:06	53.98		-0.36		
HTL	HE	186.0	ES		18:07	15.47		0.11		
HTL	HN	186.0	AML		18:07	17.70	676	0.24		
HTL	HE	186.0	AML		18:07	18.10	1143	0.39		
XDE	SZ	263.0	EP		18:07	03.13		-0.91		
GIM	SZ	263.0	EP		18:07	03.72		-0.35		
GIM	SE	263.0	AML		18:07	40.89	347	0.20		
GIM	SN	263.0	AML		18:07	41.19	101	0.10		
KESW	HZ	268.0	EP		18:07	04.47		-0.16		
KESW	HN	268.0	AML		18:07	40.93	200	0.34		
KESW	HE	268.0	AML		18:07	45.04	290	0.56		
ELSH	HZ	286.0	EP		18:07	06.61		-0.23		
ELSH	HE	286.0	AML		18:07	46.50	274	0.32		
ELSH	HN	286.0	AML		18:07	49.96	289	0.32		
GCD	SZ	309.0	EP		18:07	08.80		-0.95		
GMM	SZ	317.0	EP		18:07	10.76		-0.01		
BHH	SZ	324.0	EP		18:07	11.01		-0.69		
BHH	SE	324.0	ES		18:07	44.47		-0.93		
BHH	SN	324.0	AML		18:07	59.98	253	0.28		
BHH	SE	324.0	AML		18:08	01.60	259	0.58		
GAL1	HZ	327.0	EP		18:07	11.04		-0.99		
GAL1	HE	327.0	AML		18:07	57.04	164	0.50		
GAL1	HN	327.0	AML		18:08	02.69	166	0.52		
ECK	SZ	333.0	EP		18:07	11.95		-0.91		
BWH	SZ	338.0	EP		18:07	13.77		0.35		
ESK	HZ	349.0	EP		18:07	12.94		-1.84		
ESK	HN	349.0	AML		18:07	47.97	85	0.30		
ESK	HE	349.0	AML		18:08	13.03	88	0.40		
EBL	SZ	399.0	EP		18:07	20.53		-0.50		
EAU	SZ	409.0	EP		18:07	21.76		-0.59		
ESY	SZ	414.0	EP		18:07	22.11		-0.80		
EDI	HZ	416.0	EP		18:07	21.64		-1.50		
EDI	HN	416.0	ES		18:08	02.62		-2.57		
EDI	HE	416.0	AML		18:08	35.76	53	0.70		
EDI	HN	416.0	AML		18:08	36.23	70	0.70		
EAB	SZ	458.0	EP		18:07	26.62		-1.77		
November	17	2008	Time:	02:04	47.4	UTC	Magnitude:	1.7	ML	
Lat:	48.878N	Lon:	-2.931W				Depth:	4.3	km	
Grid Ref:	331.75 kmE	113.14 kmN					RMS:	0.60	secs	
Locality:	ENGLISH CHANNEL									
Velocity model:	Lownet	Xnear: 200.0	Xfar: 500.0							
Comment:	70KM SW OF JERSEY									
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES
JSA	HZ	65.4	EP		02:04	58	.23			-0.71
JSA	HE	65.4	ES		02:05	06	.78			-0.61
JSA	HN	65.4	AML		02:05	12	.24	37	0.37	
JSA	HE	65.4	AML		02:05	12	.81	32	0.31	
JRS	SE	70.6	ES		02:05	09	.28			0.48
JRS	SE	70.6	AML		02:05	15	.70	30	0.20	
JLP	SZ	73.2	EP		02:05	00	.58			0.41
JQE	SZ	74.5	EP		02:05	00	.59			0.23
DYA	HZ	188.0	EP		02:05	16	.90			-0.15
DYA	HN	188.0	ES		02:05	39	.62			0.90
DYA	HE	188.0	AML		02:05	43	.86	10	0.27	
DYA	HN	188.0	AML		02:05	45	.19	8	0.38	
HTL	HE	261.0	ES		02:05	53	.16			-1.23
HTL	HN	261.0	AML		02:06	06	.28			
HTL	HE	261.0	AML		02:06	11	.65	7	0.48	
JRS	SZ	70.6	EP		02:05	00	.00			0.24
November	25	2008	Time:	03:24	10.3	UTC	Magnitude:	2.2	ML	
Lat:	53.528N	Lon:	0.414W				Depth:	19.4	km	
Grid Ref:	559.99 kmE	406.22 kmN					RMS:	0.20	secs	
Locality:	SOUTHERN NORTH SEA									
Velocity model:	Lownet	Xnear: 500.0	Xfar: 1000.0							
Comment:	30KM E OF GRIMSBY									
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES
AW1	SZ	104.0	EP		03:24	27	.07			0.23
AEU	SZ	115.0	EP		03:24	28	.58			0.14
AEU	SN	115.0	ES		03:24	41	.49			-0.17
AEU	SN	115.0	AML		03:24	43	.28	40	0.22	
AEU	SE	115.0	AML		03:24	44	.43	68	0.16	
KBI1	SZ	133.0	EP		03:24	30	.71			-0.29
KBI1	SZ	133.0	ES		03:24	46	.48			0.39
KWE	SZ	161.0	EP		03:24	34	.40			-0.13
KESW	HE	259.0	AML		03:25	26	.81	14	0.56	
KESW	HN	259.0	AML		03:25	30	.19	13	0.56	
MCH1	HZ	286.0	EP		03:24	50	.03			-0.17
MCH1	HE	286.0	AML		03:25	31	.34	7	0.66	
MCH1	HN	286.0	AML		03:25	32	.79	8	0.22	
December	11	2008	Time:	13:12	05.3	UTC	Magnitude:	1.2	ML	
Lat:	55.393N	Lon:	-4.227W				Depth:	7.4	km	
Grid Ref:	258.96 kmE	613.26 kmN					RMS:	0.30	secs	
Locality:	CUMNOCK, EAST AYRSHIRE									
Velocity model:	Lownet	Xnear: 100.0	Xfar: 200.0							
Comment:	Lownet Xnear: 100.0 Xfar: 200.0									
STAT	CO	DIST	PHAS	WT	P	HrMn	SECS	AMPL	PERI	RES
PGB1	HZ	52.8	EP		13:12	13	.90			-0.47
PGB1	HN	52.8	ES		13:12	20	.91			-0.09
PGB1	HE	52.8	AML		13:12	26	.72	11	0.54	
PGB1	HN	52.8	AML		13:12	28	.44	14	0.48	
PGB1	HE	54.7	AML		13:12	23	.85	15	0.40	
PGB1	HN	54.7	AML		13:12	25	.27	11	0.44	
EAU	SZ	62.2	EP		13:12	15	.94			0.10
GAL1	HZ	73.1	EP		13:12	17	.45			-0.04
GAL1	HN	73.1	ES		13:12	26	.28			-0.12
GAL1	HE	73.1	AML		13:12	31				

TABLE 2 : PHASE DATA

TABLE 3

## GEOGRAPHIC COORDINATES OF SEISMOGRAPH STATIONS, 2008

Code	Name	Lat	Lon	KmE (km)	KmN (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
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
BCM	CHAPELCROSS MIC	55.0151	-3.2212	321.92	569.64	78	M
BDL	DOBCROSS HALL	54.8030	-2.9385	339.68	545.76	157	1R
BHI	HOWATS HILL	55.0931	-3.2181	322.27	578.31	216	3R
BNA	NEW ABBEY	54.9658	-3.6242	296.03	564.68	28	1R
BTA	TALKIN	54.9057	-2.6844	356.12	557.00	279	3R
BWH	WARDLAW	55.1758	-3.6549	294.62	588.09	269	1R
CBW1	BUDOCK WATER	50.1482	-5.1144	177.53	32.29	94	1R
CCA1	CARNMENELLIS	50.1866	-5.2277	169.62	36.90	210	1R
CCO1	CONSTANTINE	50.1357	-5.1957	171.66	31.14	168	1R
CDU1	DUNNERDALE	54.3362	-3.1952	322.30	494.08	355	1R
CGH1	GOONHILL	50.0507	-5.1649	173.46	21.60	97	1R
CGW	GEEK	50.1006	-5.2228	169.56	27.32	9	1R
CMA1	MANACCAN	50.0821	-5.1274	176.29	24.98	42	1R
CPZ	PENZANCE	50.1566	-5.5828	144.12	34.72	199	1R
CRQ	ROSEMANOWES	50.1672	-5.1726	173.46	34.57	156	SMR
CRQ2	ROSEMANOWES2	50.1667	-5.1687	173.74	34.51	143	3R
CSA1	ST AUSTELL	50.3527	-4.8919	194.30	54.38	112	1R
CSF	SCAFELL	54.4478	-3.2430	319.41	506.55	540	1R
CSM	SELLAFIELD MIC	54.4183	-3.4913	303.24	503.58	50	M
CST1	STITHIANS	50.1952	-5.1635	174.24	37.66	141	1R
CWF	CHARWOOD FST	52.7385	-1.3076	446.74	315.91	203	BBR
DCO	COMBE FARM	50.3201	-3.8721	266.74	48.43	117	1R
DYA	YADSWORTHY	50.4353	-3.9310	262.88	61.34	292	3MLGBBR
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
EDR	DRUMTOCHTY	56.9190	-2.5393	367.17	780.97	401	1R
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
FHV	HALDARSKV	62.2597	-7.0984			380	1R
FSD	SUDUROY	61.5701	-6.7884			480	1R
FOEL	FOEL WYLFA	52.8898	-3.2012	319.27	333.15	449	BBR
FSV	SVINOY	62.2598	-6.3550			430	1R
FTO	TORSHAVN	62.0199	-6.8274			325	3R
FVA	VAGAR	62.0575	-7.3520			430	1R
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
GIM	ISLE OF MAN (North)	54.2923	-4.4672	239.44	491.35	346	3R
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
HAE	ALDERS END	52.0368	-2.5434	362.73	237.79	260	1R
HBL2	BONNYLANDS	52.0508	-3.0384	328.80	239.71	437	SMR

TABLE 3

## GEOGRAPHIC COORDINATES OF SEISMOGRAPH STATIONS, 2008

Code	Name	Lat	Lon	KmE (km)	KmN (km)	Ht (m)	Comp
HCG	CRAIG GOCH	52.3231	-3.6570	287.08	270.78	533	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
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	BB
KEY1	KEYWORTH	52.8779	-1.0757	462.20	331.59	59	LGR
KEY2	KEYWORTH	52.8790	-1.0770	462.13	331.73	76	SMR
KNR1	NEVIS RANGE	56.8219	-4.9714	218.68	773.97	1147	1R
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
KSX	SCOVAL	57.4659	-6.7002	118.21	851.46	265	1R
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
LDU	LEEDS	53.8058	-1.5540	429.37	434.51	74	MLGSMR
LHO	HOLMEFIRTH	53.5453	-1.8548	409.62	405.44	462	1R
LMI	MILLOM	54.2206	-3.3070	314.79	481.35	129	3R
LMK	MARKET RASEN	53.4569	-0.3260	511.14	396.90	146	1R
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
MFI	FISHRIE	57.6119	-2.2956	382.34	858.00	232	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
MVH1	ACHVAICH	57.9250	-4.1825	270.75	894.90	185	1R
OBR	BRABSTER	58.6142	-3.1626	332.47	970.13	89	1R
ODR	DOUNREAY	58.5822	-3.7256	299.68	967.27	100	SM
OHO	HOY	58.8322	-3.2465	328.05	994.48	172	1R
ORE	REAY	58.5480	-3.7622	297.45	963.52	100	3MLGR
OST	STRONSAY	59.0860	-2.5516	368.39	1022.20	21	1R
OTO	TONGUE	58.4953	-4.3939	260.49	958.79	338	1R
OWE	WESTRAY	59.3180	-3.0289	341.44	1048.36	87	1R
PCA1	CARROT	55.7007	-4.2550	258.30	647.55	302	1R
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	MUIRSHIEL	55.8459	-4.7452	228.15	664.82	351	1R
POB1	OBSERVATORY	55.8458	-44299	247.88	664.06	34	MLGR
RCR	CAPE WRATH	58.6245	-4.9987	225.90	974.58	100	1R
REB	EISG-BRACHAIDH	58.1194	-5.2802	206.82	919.16	100	1R

**TABLE 3****GEOGRAPHIC COORDINATES OF SEISMOGRAPH STATIONS, 2008**

<b>Code</b>	<b>Name</b>	<b>Lat</b>	<b>Lon</b>	<b>KmE (km)</b>	<b>KmN (km)</b>	<b>Ht (m)</b>	<b>Comp</b>
RFO	FORSNAVAL	58.2133	-7.0052	106.10	935.83	195	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
SBD1	BRYN DU	52.9055	-3.2585	315.37	335.01	489	1R
SFH	HASELMERE	51.0604	-0.6912	491.71	129.88	260	1R
SIW	ISLE OF WHITE	50.6711	-1.3747	444.18	85.97	162	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
SSP1	STONEY POUND	52.4177	-3.1119	324.39	280.59	428	3R
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
SWK	WARMINSTER	51.1483	-2.2471	382.72	138.87	266	1R
SWN1	SWINDON	51.5137	-1.8007	413.83	179.49	192	3MLGSMBBR
TBW	BRENTWOOD	51.6549	0.2913	558.48	197.66	89	1R
TCR	COLCHESTER	51.8347	0.9212	601.24	219.20	45	1R
TEB	EASTBOURNE	50.8187	0.1457	551.13	104.39	68	1R
TFO1	FOLKESTONE	51.1135	1.1409	619.81	139.66	202	3MLGSMR
TSA1	SEVENOAKS	51.2426	0.1561	550.48	151.53	177	1R
WAL1	WALLS	60.2564	-1.6173	421.18	1152.46	167	1R
WCB1	CHURCH BAY	53.3782	-4.5467	230.62	389.87	139	3MSMR
WFB	FAIRBOURNE	52.6831	-4.0383	262.23	311.48	316	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
XDE	DENT	54.5056	-3.4902	303.52	513.29	301	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

**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**

<b>Structural area</b>	<b>Depth to top of layer (km)</b>	<b>P-wave velocity (km/sec)</b>	<b>Vp/Vs</b>
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.

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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.