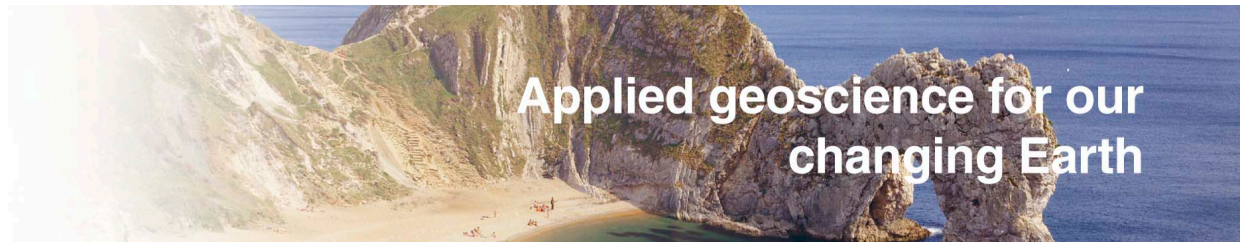




**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL



UK School Seismology Project

Paul Denton

British Geological Survey

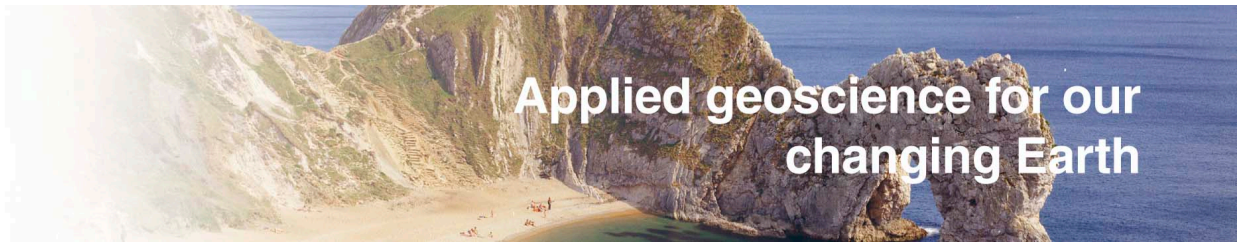
Keyworth

PES  **GB**



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- Overview of school seismology
- What we do at the moment
- What we would like to be able to do

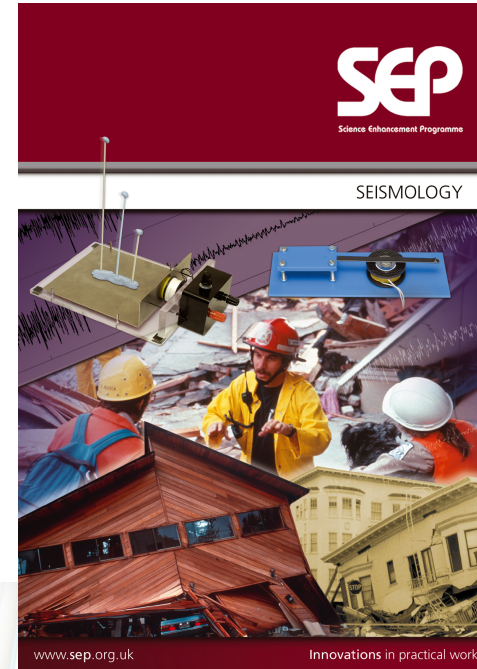
Aims of School Seismology Project

- To make science more interesting for students
- To improve the participation rates in physical sciences
- To influence curriculum development in the UK and promote the inclusion of seismology and geoscience topics into the science and geography syllabus.
- To raise awareness of geoscience as a scientific discipline for pre-university students.



What is the School Seismology Project?

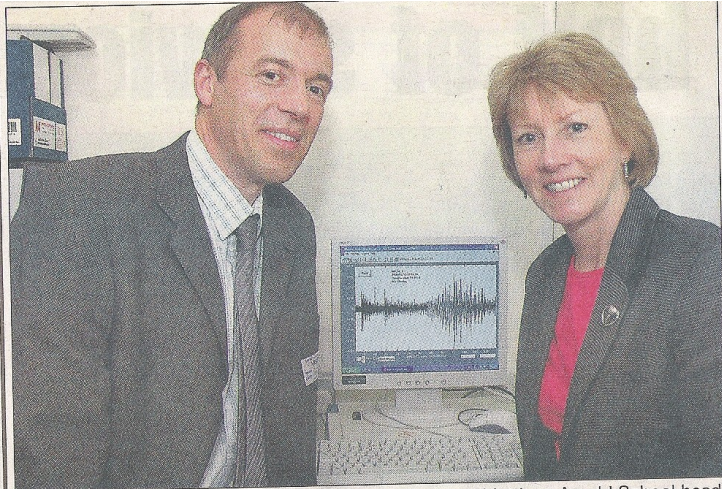
- Classroom experiments with earthquakes and seismology as a unifying theme
- A school based seismometer system that is simple, understandable and capable of detecting earthquakes from the other side of the world



What can seismology do for schools?

- Make lessons exciting and interesting
- Create links between experiments and the real world
- Run a 24/7 experiment that lasts for more than the standard 40 minute one
- Improve participation in science
- Obtain positive press coverage





QUAKE MONITOR: Dr Alan Pointing, from Venture, and Matthew Arnold School head teacher Jackie Pearson with the new machine, which is showing activity in Japan

Seis matters for science pupils



4th years Hannah Clarke with seismograph and Liam Swanson.

Holiday return shock for Kinross pupils

PUPILS AND teachers returning to Kinross High School after their Easter break made a shocking discovery.

They found that the school seismometer had clearly detected the recent earthquake in L'Aquila, near the Italian city of Rome.

The machine recorded the shock waves as they hit the tragic city on Monday, April 6.

The seismometer was given to Kinross High by the British Geo-

logical Survey as part of their seismology in schools initiative, which brings real life earth sciences into the classroom.

The machine is connected to a school computer and is monitoring the Earth around the clock in search of other quakes.

The equipment can detect earthquakes greater than magnitude 6.5 which occur anywhere in the world, as well as more local movement.

RESULT! COLLEGE QUAKE RECORDINGS SOME OF WORLD'S BEST



LEARNING THEIR LINES: Paul Denton, left, of the British Geological Survey, and Stewart Fishwick, right, from the Department of Geology at the University of Leicester, check out the data gathered by the seismometer at John Cleveland College with A-level geology student Michael Ives

Students making waves with aftershock analysis

by IAN WISHART

Tower of jelly Scottish pupils show earthquake detection



Lauren Barnett, from Dundee High School, joined pupils from all over Scotland at Our Dynamic Earth in Edinburgh yesterday to demonstrate their knowledge of earthquake detection to the schools minister, Keith Brown
Picture: Neil Hanna

Officials said up to 300 people were killed in the earthquake in Pakistan's south-west Balochistan province on Wednesday, October 29.

Up to 50,000 people are thought to be homeless following the quake, which measured 6.4 on the Richter scale.

Student Michael Ives, 17, said: "It's given us a first-hand view of the earthquakes as they've happened. "Otherwise we'd have just been looking at other people's data on the internet. This is real."

Paul Denton, of BGS, said he hoped the analysis had inspired the group to pursue their interest in science.

He said: "This is all part of making science interesting and trying to address the decline in students studying it at university.

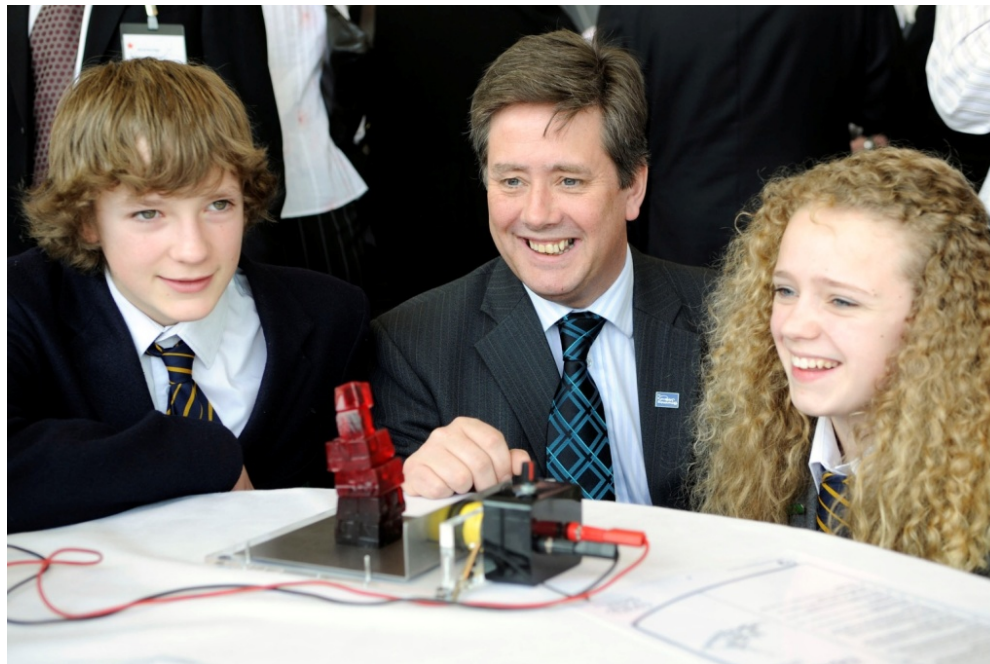
"It's harder to get a good grade at a science A-level than it is in media studies or psychology but the impact on the UK of schools not pushing students to do science is a growing concern.

"It's quite worrying where the next generation of scientists and engineers are going to come from."



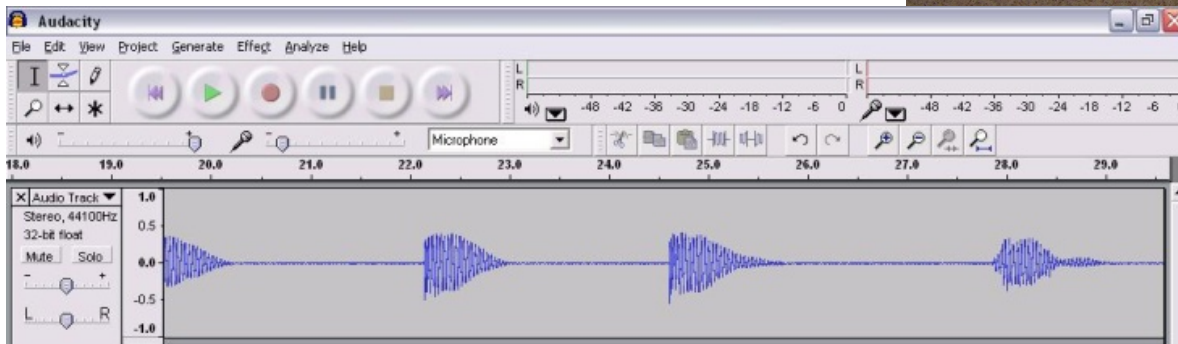
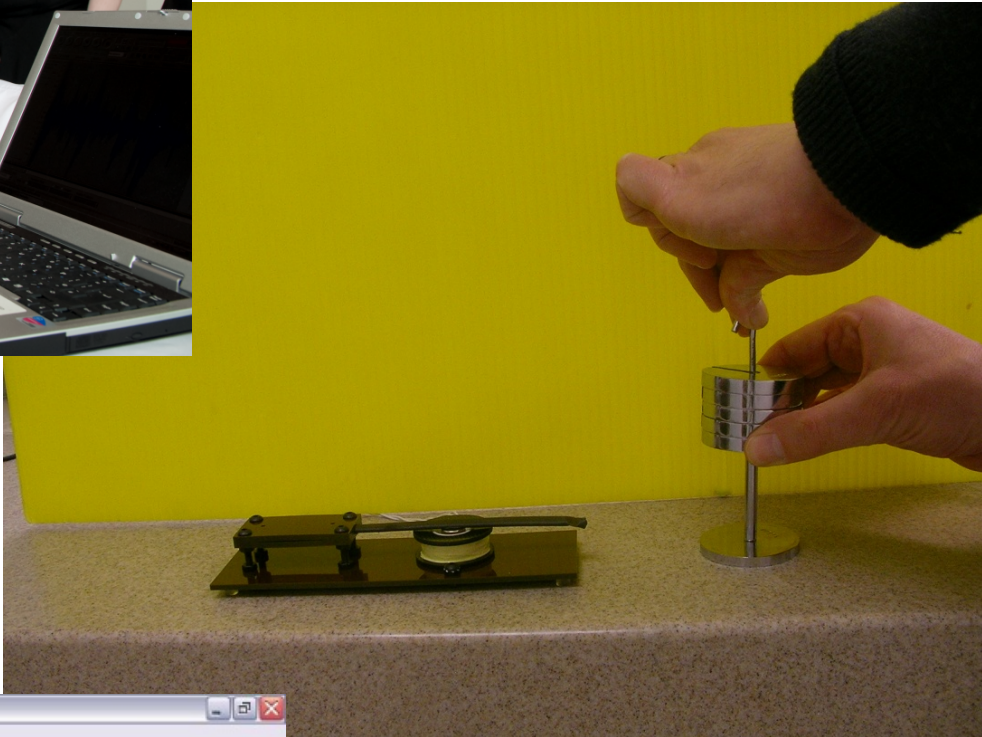
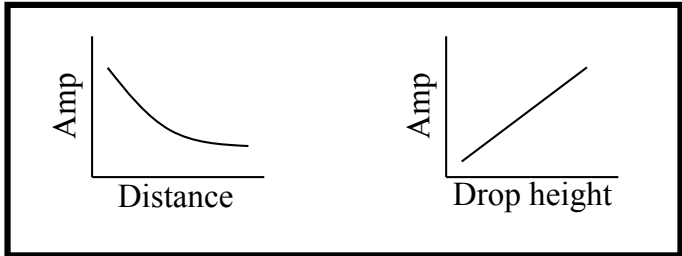
Status of Project September 2009

- Approximately 400 schools in UK and Ireland have school seismometers (~300 in the USA)
- Science geology and geography teachers involved
- Roll out to ~ 150 schools in 2009
- Website databases linked with IRIS schools network and Irish schools network

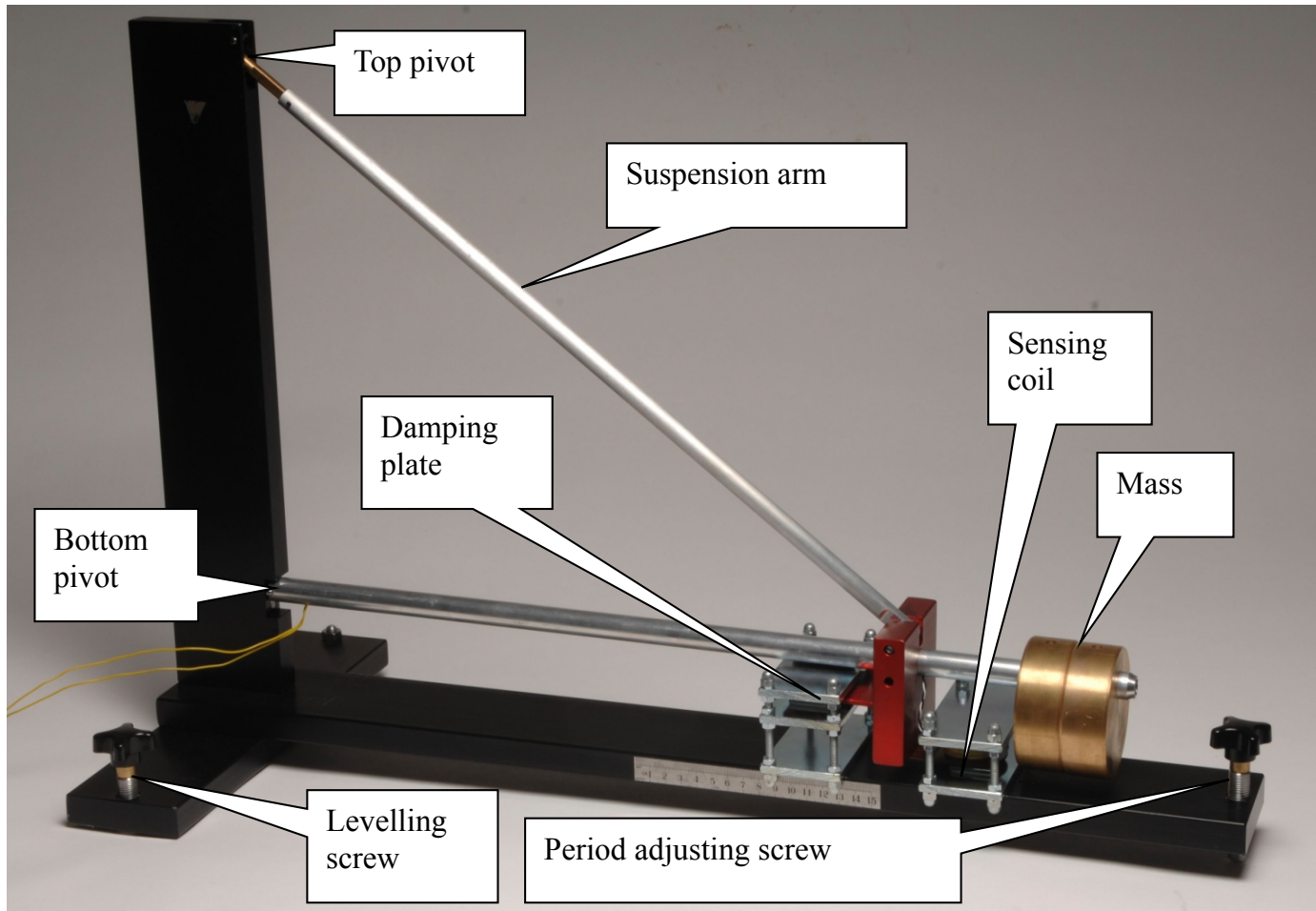




Detecting vibrations

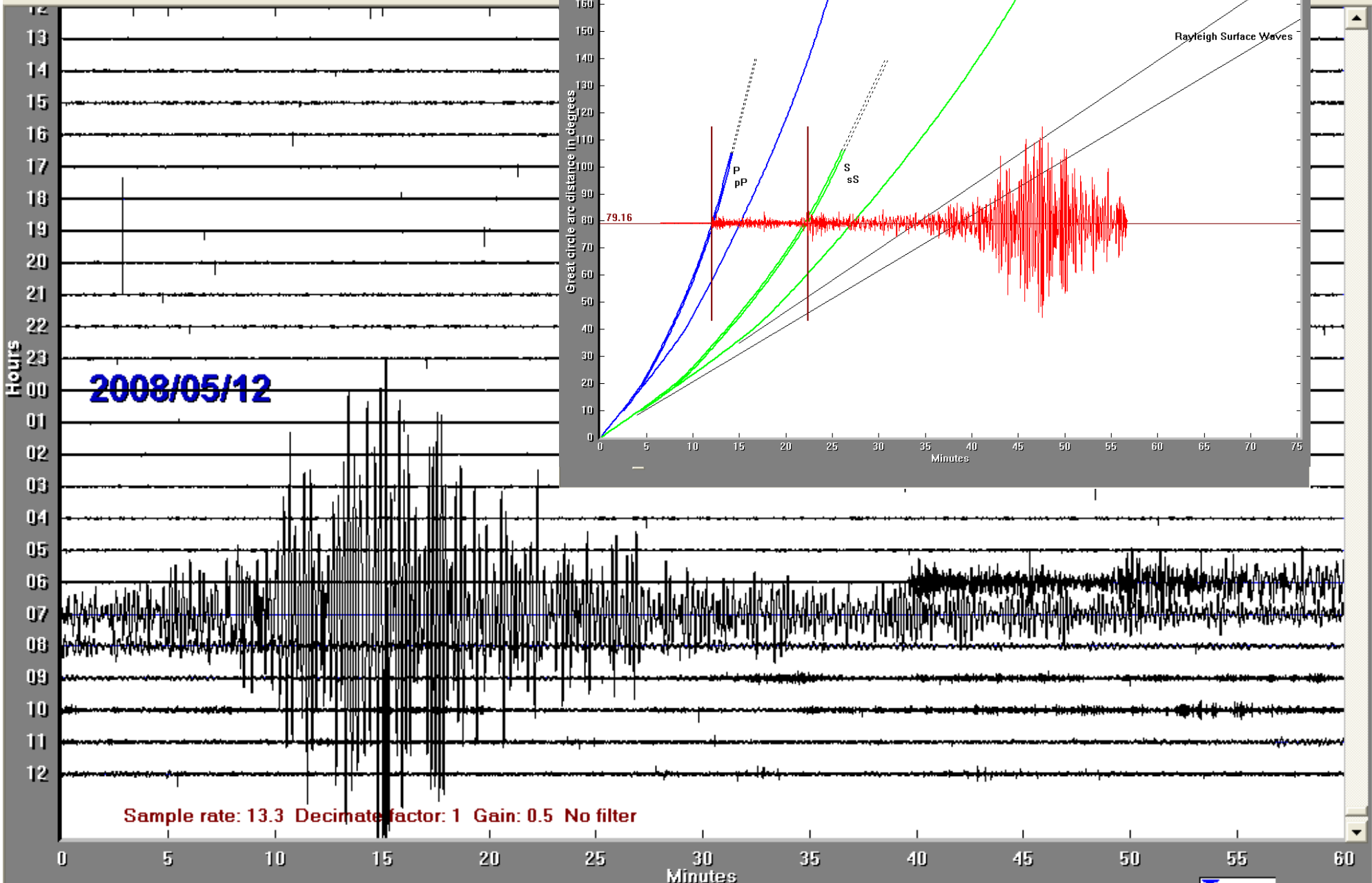


SEP seismometer system



Find a suitable location.....





Learning & popular geology

Educational resources

School seismology

▼ **Earthquakes and data**

- Earthquake data
- Earthquake locator
- Arrival time predictor
- Upload your data
- ▶ Stations
- ▶ Resources
- ▶ Contacts
- News

UK School Seismology Project 'real science with real data'

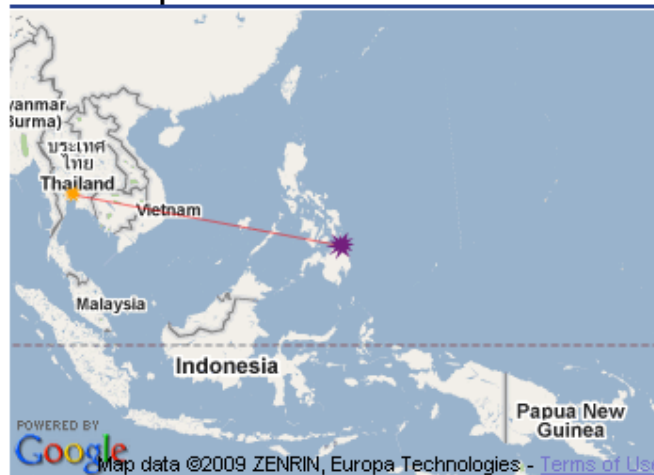
The school seismology project enables schools to detect signals from large earthquakes happening anywhere in the world.

The sheer destructive power of earthquakes has always held a fascination for children. This project capitalises on this natural interest by making use of earthquakes and seismology as a unifying theme to teach a range of basic science concepts.

- detect world earthquakes in the classroom using a [simple seismometer system](#)
- exchange your [Earthquake data](#) with schools around the world
- use seismology to teach geography and physics lessons with our [classroom resources](#) developed with the [SEP](#)



Latest earthquake



Key:

- ★ Earthquake in Mindanao, Philippines
- ★ Stations that have recorded data for this quake

Date	Time	Location	
11/11/09	13:48.23	Mindanao, Philippines	
Magnitude	Latitude	Longitude	Depth
5.5	9.2664	125.5674	5.5



School seismology and rapidseis

- Installing new software in schools is a barrier to uptake
- data visualisation ..frequency filtering.. spectrum analysis.. P-S travel time analysis.. P arrival time picking
- Scalability...application on a website (SG2K) vs portal hosted software ??
- 400 schools =400 teachers but 10,000 students !

NERA NA10

- Link school seismology projects in UK, Fr, Ch It, Ir USA
- Share event data using webservice
- Develop web accessible data visualisation and analysis tools (develop SeisGram2K)

