

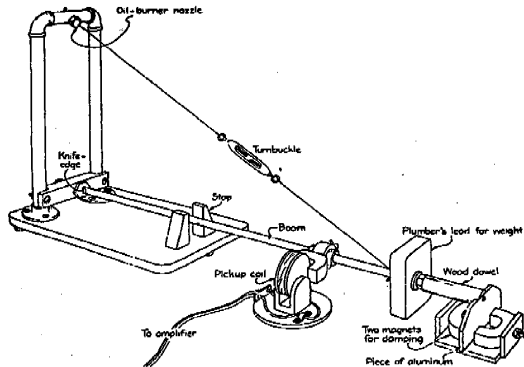
Seismometers for New Zealand Schools

Kasper van Wijk and Ludmila Adam

University of Auckland

November 26th, 2013

Scientific American Magazine, "The Amateur Scientist"



How to build a simple seismograph to record earthquake waves at home by Jearl Walker, July 1979. Design by Jim Lehman, James Madison University

School seismology programs around the world



IRIS
Incorporated Research Institutions for Seismology



SEISMOGRAPHS
in schools



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Seismographs in Schools

What's New

JAmSeis is now available for open beta testing!
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Celebrating the life and legacy of John C. Lahr
[Announcing a scholarship fund established in John's memory.](#)

AmSeis Latest Release
Version 3.1 Level 2012.01.28

About the Program

IRIS's Seismographs in Schools Program serves teachers across the country and around the world using seismic instruments or real-time seismic data in K-16 classrooms. Additionally, our site includes tools to share seismic data in real-time, classroom activities, and technical support documents for seismic instruments. Our hope is to bridge the gap between science classrooms to create an international educational seismic network.



Join our Network!

Are you operating a seismometer in your classroom currently? [Join our network!](#)

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Discovering geology | Climate change | Hazards | Time | Geology of Britain


UK School Seismology Project 'real science with real data'

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

The sheer destructive power of earthquakes has always had a reputation for inspiring. The project harnesses on this natural fear of shaking and use of seismographs and seismology as a unifying theme to teach a range of basic science concepts.

- detect world earthquakes in the classroom using a simple real-time system
- exchange your Earthquake data with schools around the world
- use seismology to learn programme and physics lessons with our classroom resources developed with the '2012'
- **NEWS** Report Earthquake - May 2011

Latest earthquake



Date	19/01/13
Time (UTC)	12:05:33
Location	Offshore Los Angeles Area, California
Magnitude	3.8
Latitude	34.03
Longitude	-117.76
Depth (km)	1.3

UK School Seismology Project

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Longitude	-117.70
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UK School Seismology Project

AUSTRALIAN SEISMOMETERS IN SCHOOLS

HOME SEISMIC DATA SCHOOL RESOURCES COMMUNITY CONTACT

Canberra Quake of 20th April 2012. Recorded: Melrose High School



Latest Quake:

Date:	20 September, 2013
Time:	10:38 AEST
Location:	Southern Alaska
Magnitude:	3.2
Depth:	46

[Click here for full quake details](#)

 **LATEST QUAKES**

 **SEE RECENT SEISMOGRAMS**

 **ACTIVITIES**

School seismology programs around the world

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Location: Southern Alaska
Magnitude: 3.2
Duration: 46

[Click here for full quake details](#)

 **LATEST QUAKES**  **SEE RECENT SEISMOGRAPHS**  **ACTIVITIES**

Early stages of a proposal to unify these with Global network supported by UNESCO as an International Geosciences Project

Our philosophy

Teaching seismology *hands-on* with

- simplicity
- transparency
- functionality

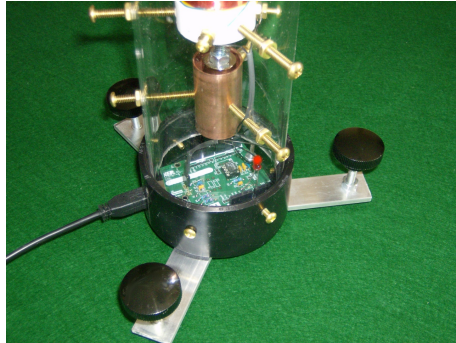
involvement from Universities through *Service Learning*



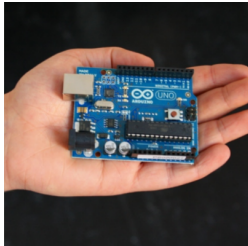
Building school seismometers: The TC1



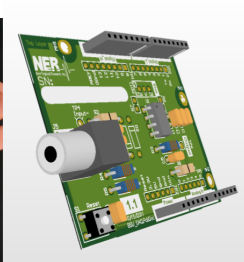
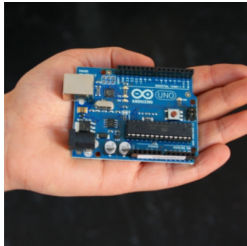
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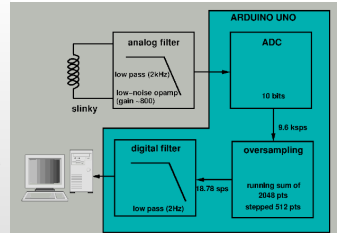
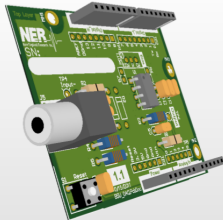
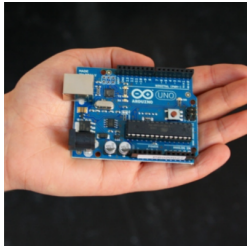
NERDAQ: The interface between sensor and computer



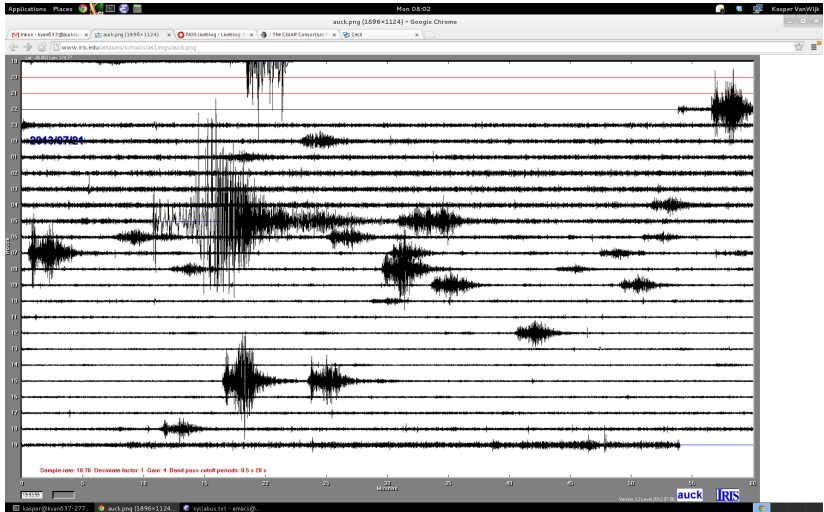
NERDAQ: The interface between sensor and computer



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Wellington Swarm on AUCK, amaseis

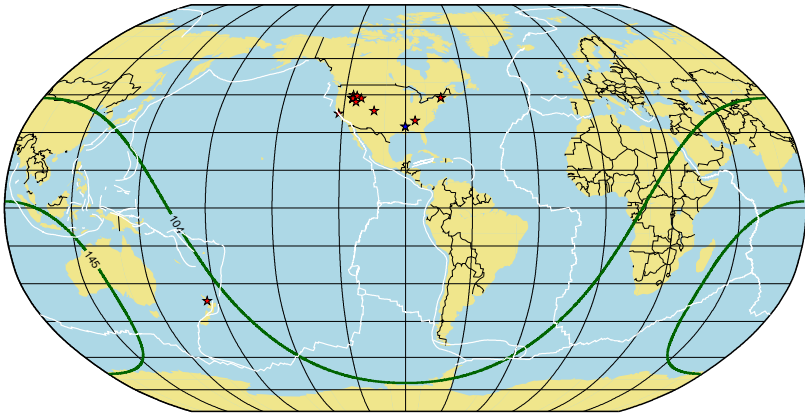


Outreach and Service Learning

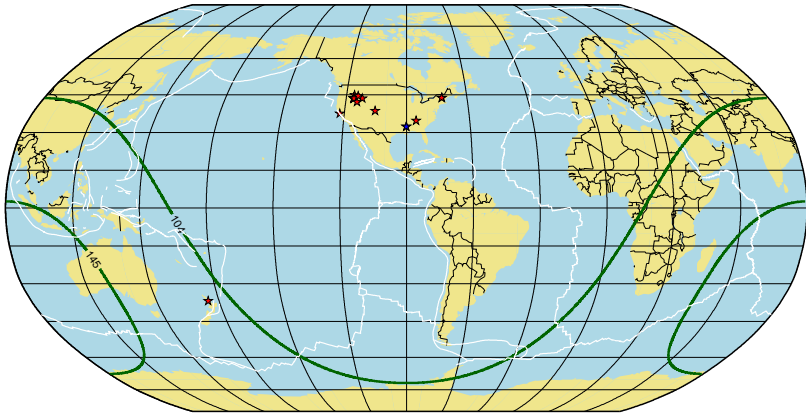


A map for each school station

LYMS in the Z-NET



LYMS in the Z-NET



Station AUCK, hosted by IRIS.edu

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Station Info

Network: [UNA](#)

AUCK - university of auckland



Location of university of auckland.



Locations of the origins of the earthquakes that this school recorded.

Recordings from AUCK, hosted by IRIS.edu

Station Info

university of auckland (College)

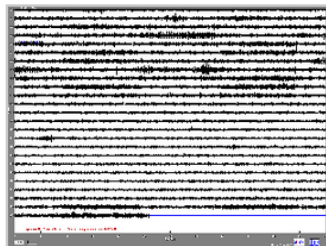
38 Princes Street
Auckland, 0626 New Zealand

This station is a Other seismometer that was installed on 10/08/2012 at an elevation of 0 meters.

<http://physics.auckland.ac.nz/>

Latitude: -36.8533
Longitude: 174.767

Realtime Image



Teachers

- [kasper van wijk](#)

Uploaded Data

View earthquakes from other years: [2012](#) [2011](#) [2010](#) [2009](#) [2008](#) [2007](#) [2006](#) [2005](#)

Date	Event	Magnitude	Seismogram Image	.SAC File
2013-11-17 09:04:57	Scotia Sea	7.8	Seismogram Image	.SAC File
2013-11-16 03:34:31	Scotia Sea	7.4	Seismogram Image	.SAC File
2013-11-02 18:53:45	Tonga region	6.5	Seismogram Image	.SAC File
2013-10-25 17:10:16	off the east coast of Honshu, Japan	7.5	Seismogram Image	.SAC File
2013-10-16 10:31:00	Bougainville region, Papua New Guinea	7.1	Seismogram Image	.SAC File
2013-10-15 00:13:00	Bohol, Philippines	7.2	Seismogram Image	.SAC File
2013-09-30 05:55:54	Kermadec Islands, New Zealand	6.7	Seismogram Image	.SAC File

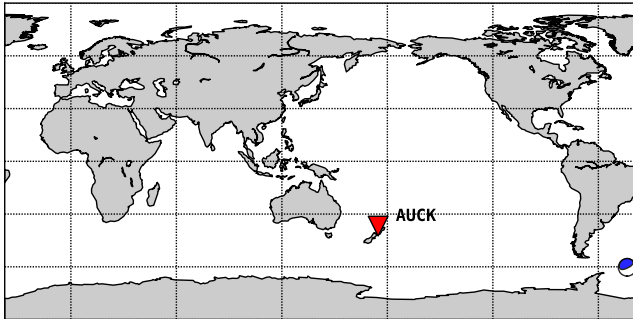
Scotia Sea, M7.8 recorded by different schools

Event Info

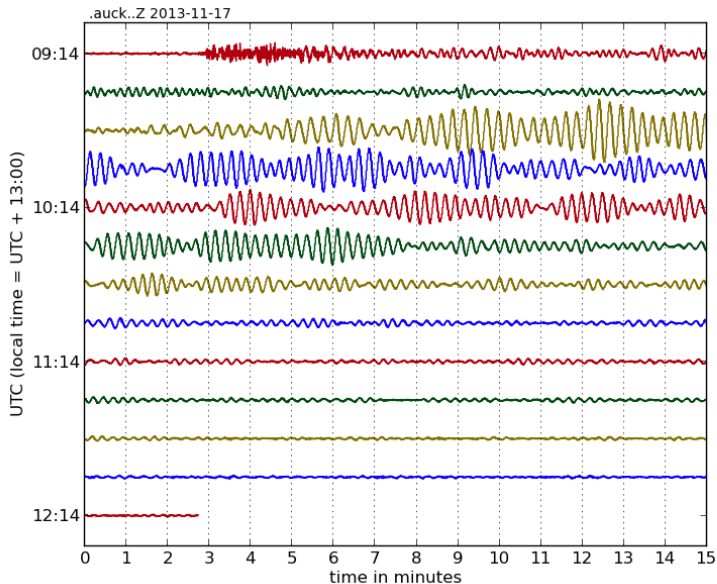
2013-11-17 09:04:57 - Scotia Sea (7.8)



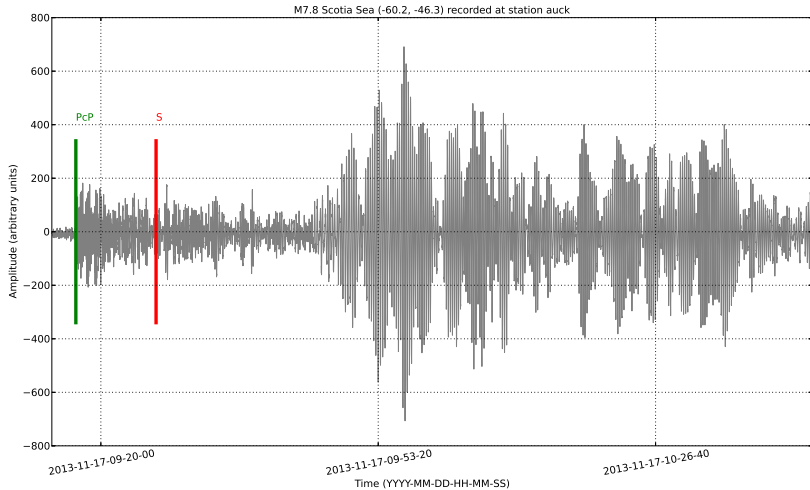
Scotia Sea, M7.8



Scotia Sea (M7.8) on AUCK



Scotia Sea with predicted arrival time



What's next?

- Continue development of hardware and software (obspy)
- Work on our Lesson plans for all ages
- Set up an NZ network of school seismometers
- Continue to seek support from SEG, EQC(?), Geonet(?), UNESCO?

Acknowledgments

- Ted Channel, Martin Smith and Karen Viskupic
- Students at Boise State University and at schools
- IRIS
- Chris Knudsen, NER
- Larry Cochrane
- Kara Ferguson
- Service Learning at BSU



For plans and more info, visit
<http://tc1seismometer.wordpress.com>