

GeoPRISMS Data Portal: New Zealand Primary Site

Andrew Goodwillie, and the GeoPRISMS Portal team

Lamont-Doherty Earth Observatory, Palisades, NY, 10960

andrewg@LDEO.columbia.edu

1) Introduction

The GeoPRISMS Data Portal of the Marine Geoscience Data System is funded by NSF as part of the IEDA Facility to provide data services to the GeoPRISMS community. For each GeoPRISMS primary site, the data portal has been populated with a range of existing high-priority terrestrial and marine data sets. For the New Zealand area, this includes, for example, links to the SAHKE and various Ewing/Rig Seismic multi-channel experiments. The portal offers tailored searches for GeoPRISMS-related data, and the GeoPRISMS bibliography seamlessly links papers to data sets and to funding awards.

GeoMapApp, Virtual Ocean and EarthObserver are map-based tools that provide rich data exploration, analysis and visualisation functionality (Figures 1 and 3).

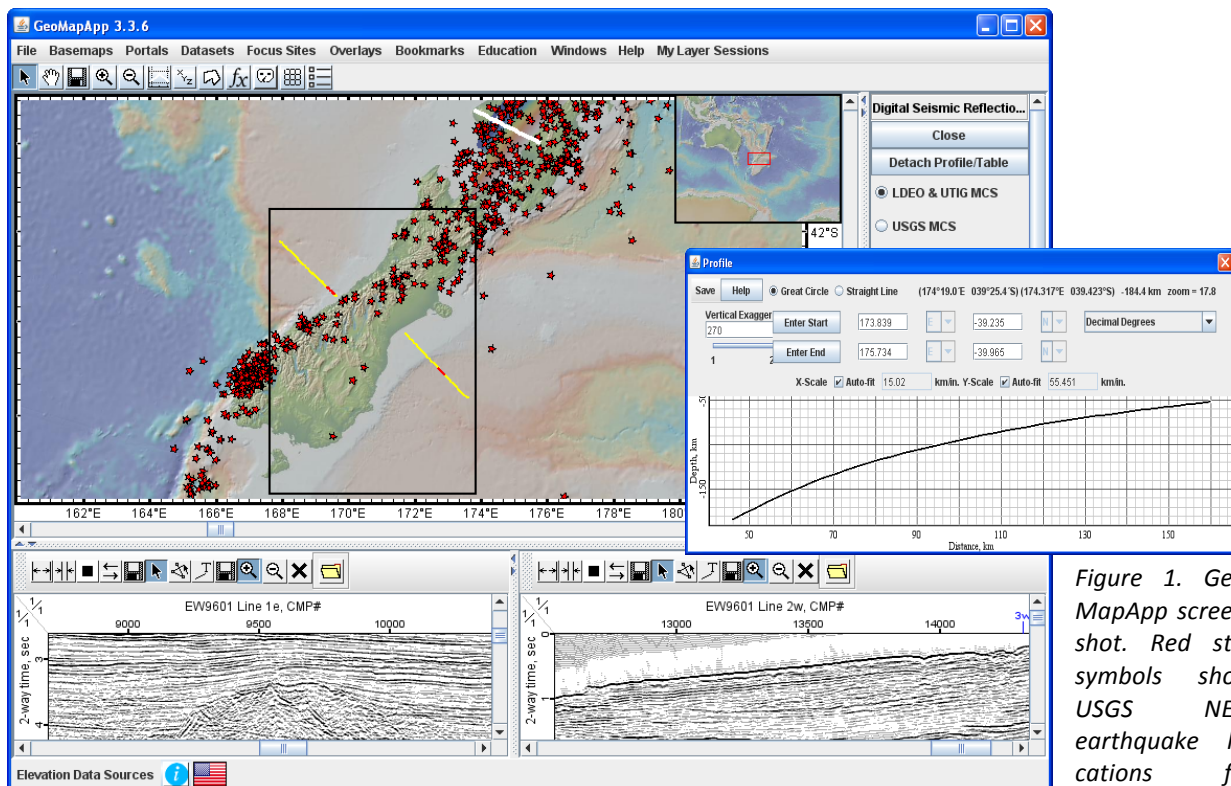


Figure 1. GeoMapApp screenshot. Red star symbols show USGS NEIC earthquake locations for

events with magnitudes > 4.5 during the period 1973-2009. The locations are plotted on top of the 30m-resolution joint Japanese-US ASTER land elevation grid and the 100m Global Multi-Resolution Topography synthesis grid of the oceans. Yellow lines indicate positions of the two MCS profiles shown in the lower panes, for Ewing cruise EW9601, legs 1e and 2w. The white line near the top of the map shows the location of the profile shown right of centre giving depth to the top of the subducting interface, from Syracuse and Abers (2006). GeoMapApp images can be saved in various formats and users are able to import their own data sets such as grids and spreadsheets.

2) Services

- **Data Portal**

The GeoPRISMS data portal, like the predecessor MARGINS portal, is integrated with the wider Lamont database system and offers a compilation of pre-existing data sets of interest to the community. Links are provided to New Zealand-related projects such as the Seismic Array Hikurangi Experiment (SAHKE), and a simple search function, described below, provides user access to the data. The portal team will work with PIs, members of the community and the GeoPRISMS Office to ensure appropriate capture of marine and terrestrial field program information and derived data products.

<http://www.marine-geo.org/portals/geoprisms/>

- **Search for Data**

Data can be found (Figure 2) by searching on key words such as data or device type, name of field program or investigator, by geographic location, and even by award numbers. Filtered searches and auto-complete technology help speed users towards data.

http://www.marine-geo.org/tools/new_search/index.php?initiative=GeoPRISMS

<u>Expedition/ Compilation</u>	<u>Platform Name</u>	<u>Start/Stop Date</u>	<u>Lead Investigator</u>	<u>References</u>
NewZealand: SAHKE ►Data Set(s)	Not Supplied	2009-11-01 2011-12-31	Stern	Henrys et al., 2010 Sutherland et al., 2010 Mochizuki et al., 2010
EW0001 ►Data Set(s)	<i>Maurice Ewing</i>	2000-01-09 2000-01-28	Fulthorpe	▼Program References Lu, 2004 Lu et al., 2003
EW9601 ►Data Set(s)	<i>Maurice Ewing</i>	1996-02-07 1996-03-13	Henryey	▼Program References Greenroyd et al., 2003 Davey et al., 1998 Harrison, 1999 Okaya et al., 2002

Figure 2. Example of data portal search results listing. Links at left take users to data sets in the IRIS and Lamont-UTIG databases and to information about the field programs. Links at right allow users to view publications tied with the data sets.

- **Data Visualisation and Exploration**

GeoMapApp and Virtual Ocean offer a rich variety of options for users to plot, analyse and visualise their data in a geographical setting (Figures 1 and 3). EarthObserver, a recently-released app for the iPad™, iPod Touch™ and iPhone™ offers instant mobile access to a large range of built-in data sets.

<http://www.geomapp.org/>, <http://www.virtualocean.org/>, <http://www.earth-observer.org/>

- **Bibliography**

The integrated, searchable GeoPRISMS bibliography contains all references from the GeoPRISMS Science Plan, bringing the total citations to more than 600, with papers tied to associated data sets and to funding awards. Searching can be done by primary site, paper title, author, year, and journal. The lists of publications can also be exported to EndNote™. To help grow the number of relevant citations, community members can submit reference information using a handy web form linked to the bibliography web page.

<http://www.marine-geo.org/portals/geoprisms/references.php>

- **Data Management Plan Tool**

To help investigators with their NSF proposal submission, the on-line data management plan form can be quickly filled in, printed in PDF format and attached to a proposal.

<http://www.iedadata.org/compliance/plan>

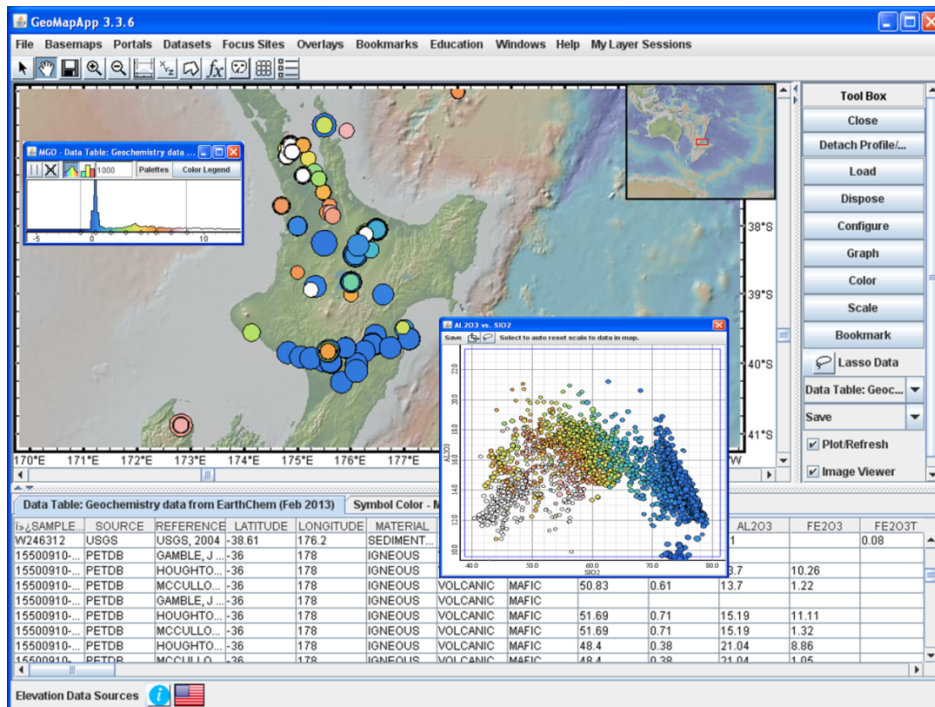


Figure 3. Geochemical analytical data of New Zealand North Island volcanic rock samples from the EarthChem database, as of February 2013. Symbols are coloured on MgO content, scaled on K₂O, and the inset graph shows Al₂O₃ plotted against SiO₂. A lasso tool allows records to be captured and saved.

3) Data Policy

Led by Susan Schwartz, the GeoPRISMS data policy was compiled by a sub-committee of the GeoPRISMS Steering and Oversight Committee, with input from NSF and the database group. <http://www.geoprisms.org/data-policy.html>

4) Community Outreach and Accountability

A representative from the database group attends most GeoPRISMS meetings to act as a community liaison, to increase awareness about the data portal services, and to solicit feedback and advice on products and resources. A report on database activities appears in the GeoPRISMS twice-yearly newsletter, and, at each GeoPRISMS Steering and Oversight Committee meeting, a report is given and data-related discussions held.

The GeoPRISMS data manager, Andrew Goodwillie, and the database team are keen to help the community with questions related to data, analysis tools or the GeoPRISMS bibliography.

5) References

GeoPRISMS Data Portal Status Report, *GeoPRISMS Newsletter*, Fall 2012, vol 29, page 18.
<http://www.geoprisms.org/images/stories/documents/newsletters/Issue%2029.pdf>
Syracuse, E.M. and G. A. Abers (2006), Global compilation of variations in slab depth beneath arc volcanoes and implications. *Geochem. Geophys. Geosyst.*, **7**(5), doi: 10.1029/2005GC001045.