GeoPRISMS Data Portal

Authors: Andrew Goodwillie (GeoPRISMS Data Manager) and the GeoPRISMS Portal team.
Affiliation: Lamont-Doherty Earth Observatory, Palisades, NY, 10960.
Contact: andrewg -at- LDEO.columbia.edu

1) Introduction

The GeoPRISMS Data Portal of the Marine Geoscience Data System is funded by NSF under the IEDA Facility cooperative agreement to provide data services to the GeoPRISMS community. For each GeoPRISMS primary site, the data portal has been 'seeded' with a range of existing high-priority terrestrial and marine data sets. For the Alaska primary site, this includes, for example, Ewing and Langseth multi-channel seismics cruises and links to USGS surveys along the Aleutian arc. The portal offers customised searches for GeoPRISMS-related data, and the GeoPRISMS bibliography database seamlessly links papers to the data sets and to funding awards.

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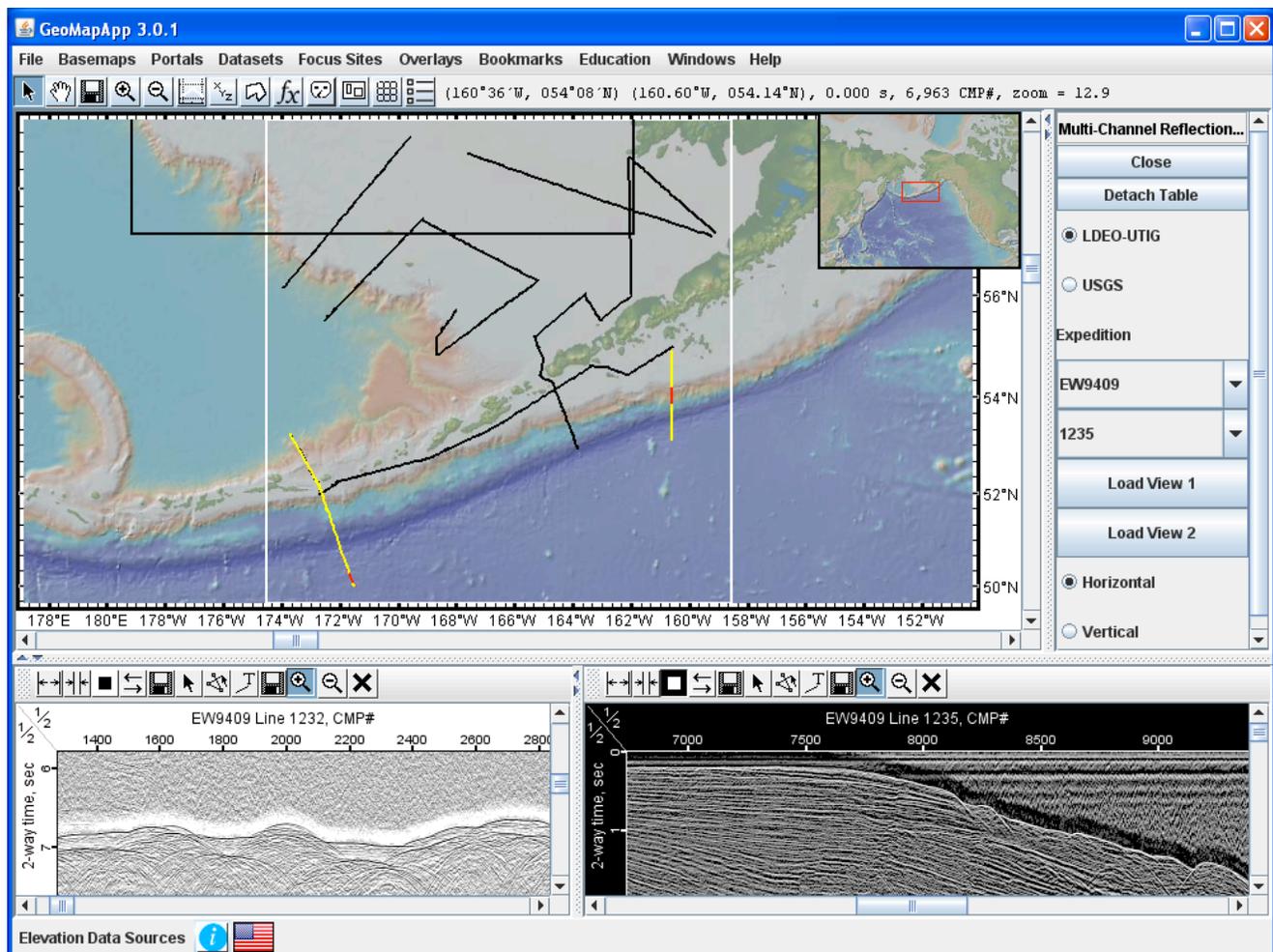

Figure 1: GeoMapApp screenshot showing Ewing EW9409 MCS lines 1232 (lower left) and 1235 (lower right, with inverse video turned on) across the Aleutian arc. The seismic lines are displayed on the map in yellow, with red portions representing the extent of the two profiles shown in the lower panes. A digitiser function allows horizons to be quickly delineated and saved to disk. The base map is the global multi-resolution topographic synthesis that offers ~60m horizontal resolution of Alaska's on-land elevations and 100m or better resolution in the oceans and on the shelves.

2) Services

- **Data Portal**
  The GeoPRISMS data portal, like the predecessor MARGINS portal, is fully 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 Alaska-related projects such as BEAAR, KALMAR, MOOS, STEEP, TACT and EDGE, and a simple search function, described below, provides user access to the data. As funding for GeoPRISMS research projects gets underway, the portal 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
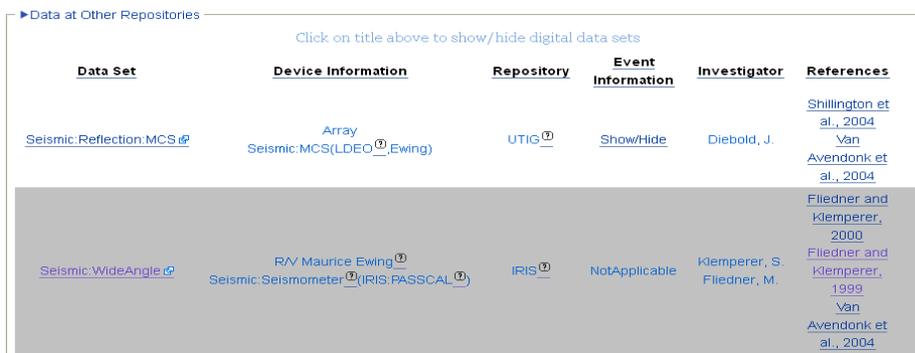
Data Set	Device Information	Repository	Event Information	Investigator	References
Seismic:Reflection:MCS	Array Seismic:MCS(LDEO,Ewing)	UTIG	Show/Hide	Diebold, J.	Shillington et al., 2004 Van Avendonk et al., 2004
Seismic:WideAngle	R/V Maurice Ewing Seismic:Seismometer(IRIS:PASSCAL)	IRIS	NotApplicable	Klemperer, S. Fliedner, M.	Fliedner and Klemperer, 2000 Fliedner and Klemperer, 1999 Van Avendonk et al., 2004

Figure 2: Example of data portal links to data for the EW9409 MCS cruise (PIs McGeary, Diebold, and Klemperer) to the Aleutian arc. Links at left take the user to MCS data files. Links at right display various publications associated with the data sets.

- **Data Visualisation and Exploration**
  The GeoMapApp and Virtual Ocean tools 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 access from mobile devices to a large range of built-in data sets.
  http://www.geomapapp.org/ , http://www.virtualocean.org/ , http://www.earth-observer.org/

- **Bibliography**
  The GeoPRISMS references database provides an integrated, searchable resource that links publications to data sets and funding awards. Currently comprising more than 175 papers of direct relevance for GeoPRISMS science, the database can be searched on author, title, journal, year, and primary site. All displayed results can also be exported in EndNote™ format. The bibliography page provides a simple tool to allow anyone to submit references for inclusion in the database.
  http://www.marine-geo.org/portals/geoprisms/references.php

- **Data Management Plan Tool**
  Since January 2011, all proposals submitted to NSF must be accompanied by a Data Management Plan. With NSF input we created a simple web page that allows PIs to fill in information boxes and generate a data management plan in PDF format to be attached to the proposal.
  http://www.iedadata.org/compliance/plan

- **Data Compliance Reporting Tool**
  Currently under development, this tool will help PIs demonstrate compliance with funding agency data policies by allowing PIs to inventory their data contributions, with links to award numbers.

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 plans to attend a number of GeoPRISMS meetings to act as a liaison with the community, to increase awareness about the data portal services, and to solicit feedback and advise on products and resources. A report on database activities will appear in the GeoPRISMS twice-yearly newsletter, and, at each GeoPRISMS Steering and Oversight Committee meeting, a report will be given and data-related discussions held.

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

5) References

GeoPRISMS Data Portal Status Report, *GeoPRISMS Newsletter*, Spring 2011, vol 26, page 26.
http://www.geoprisms.org/images/stories/documents/newsletters/issue26.pdf
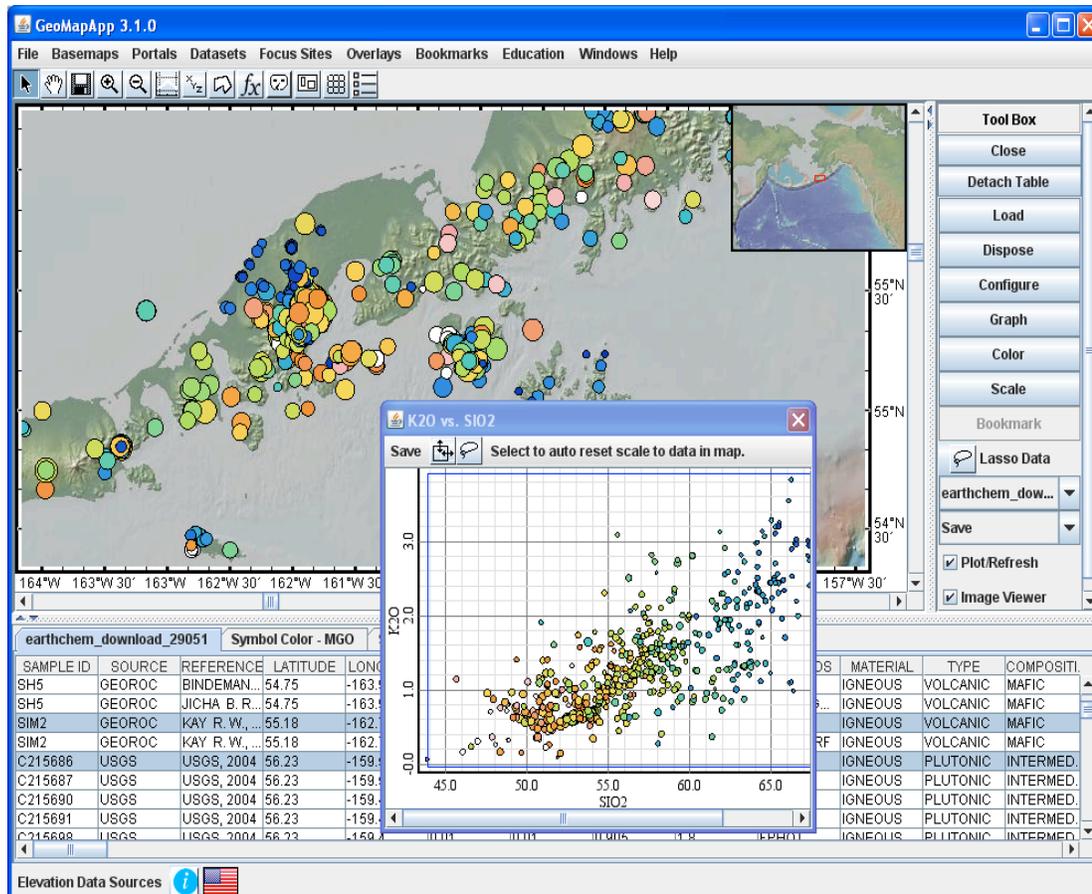
Figure 3: Geochemistry data from the EarthChem database is plotted for the Aleutian arc in GeoMapApp. Sample analyses are scaled w.r.t. Al_2O_3, coloured according to MgO content, and the inset shows K_2O graphed against SiO_2. Samples can be selected by either clicking the symbol on the map or the record row in the table. A lasso tool lets users grab data selections.