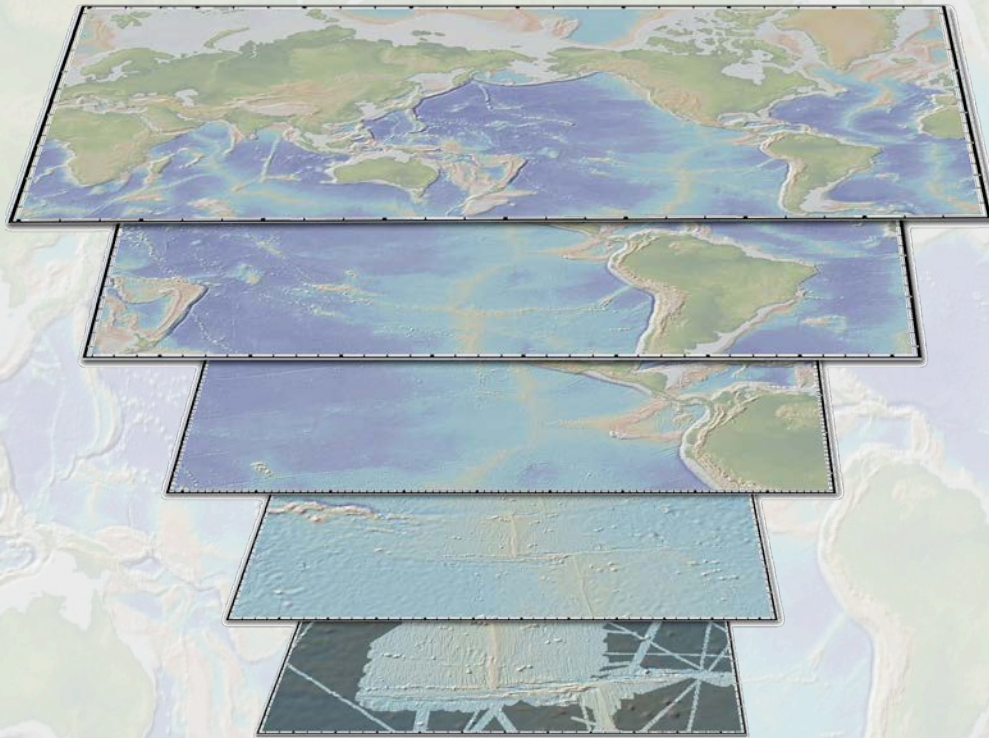
A global topographic map showing elevation and bathymetry. Landmasses are colored in shades of green, yellow, and brown, while the oceans are in shades of blue. The map is centered on the Atlantic Ocean.

Global Multi-Resolution Topography (GMRT) *Synthesis Update*

Vicki Ferrini

GMRT Overview



Global coverage



100m swath data

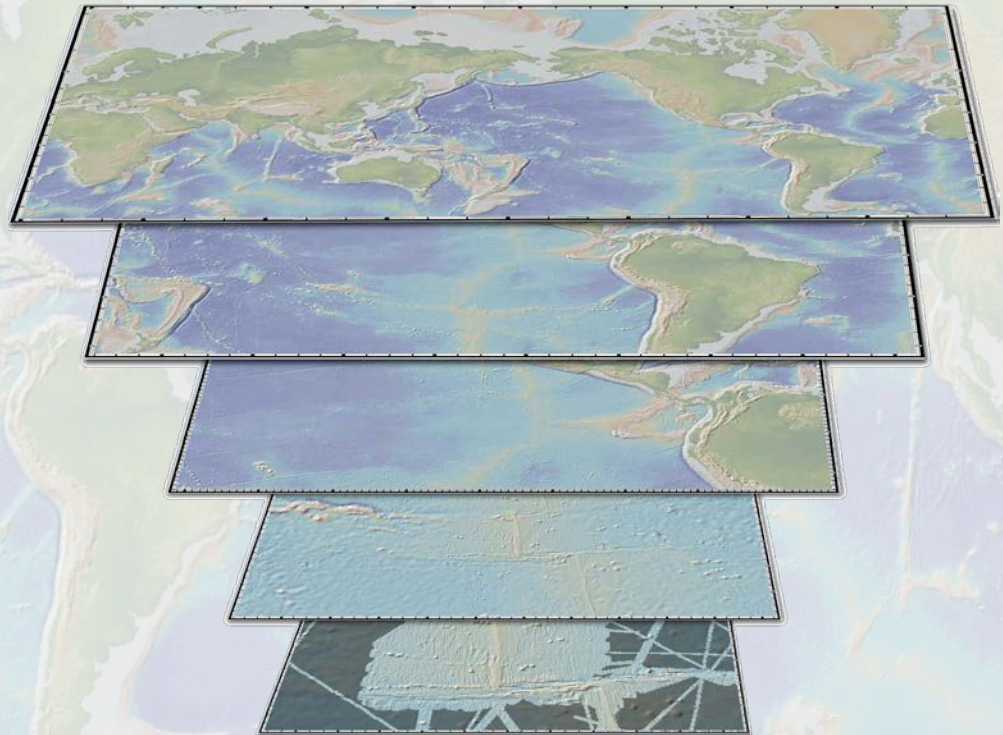
- User experiences seamless transition between resolutions based on chosen zoom level
- Access provided through multiple interfaces to images & grids
- Attribution to data contributors (CruiseID, Chief Sci, dates etc)
- Content continually expanding (2 scheduled releases/year)

GMRT Components

Global & Regional
Grids (≥ 500 m res.)
e.g. *GEBCO_08*, *IBCAO*

Contributed
Grids (< 500 m res.)

LDEO 100-m
compilation* (ping
files in public domain)

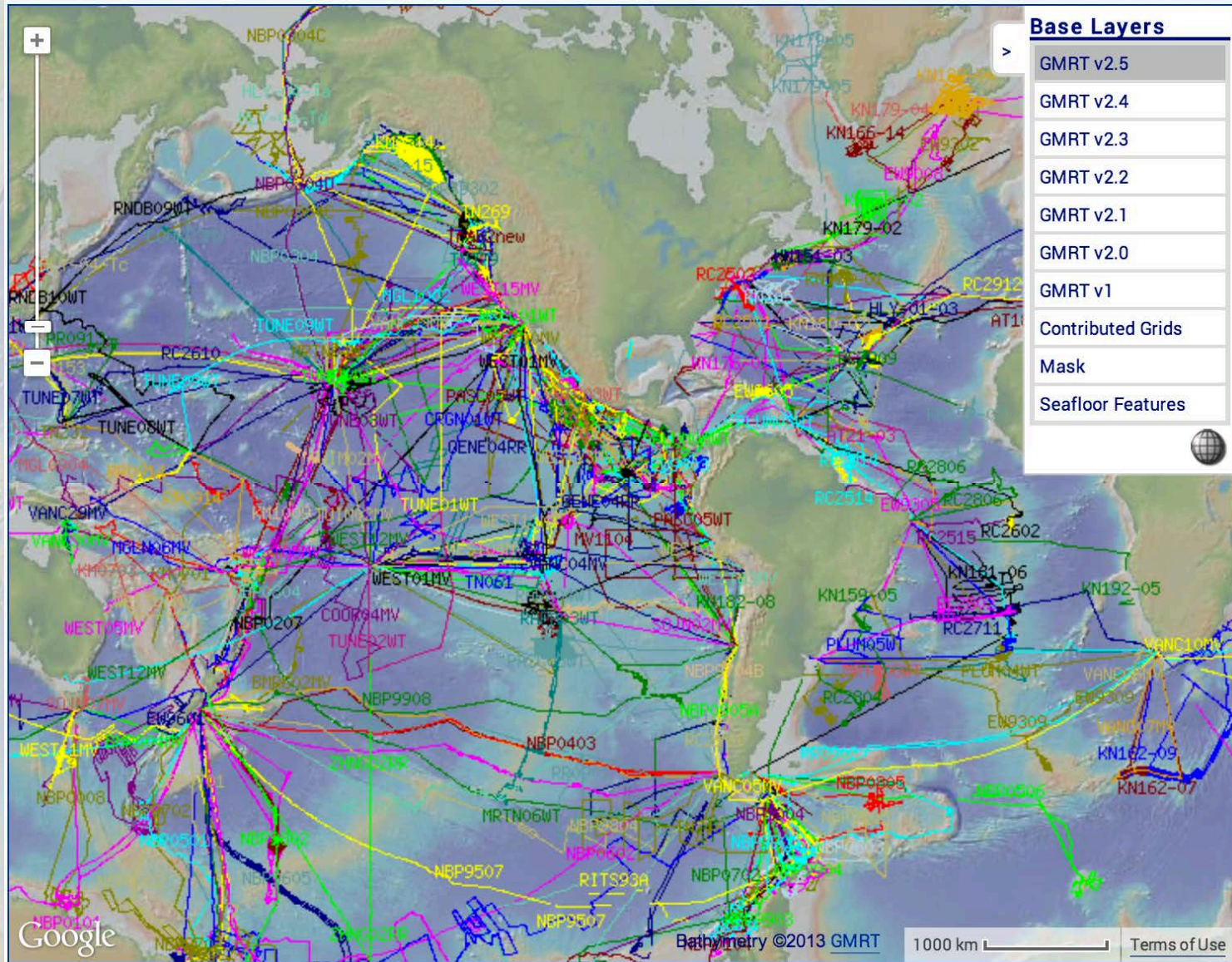


*LDEO team performs QC of ping files

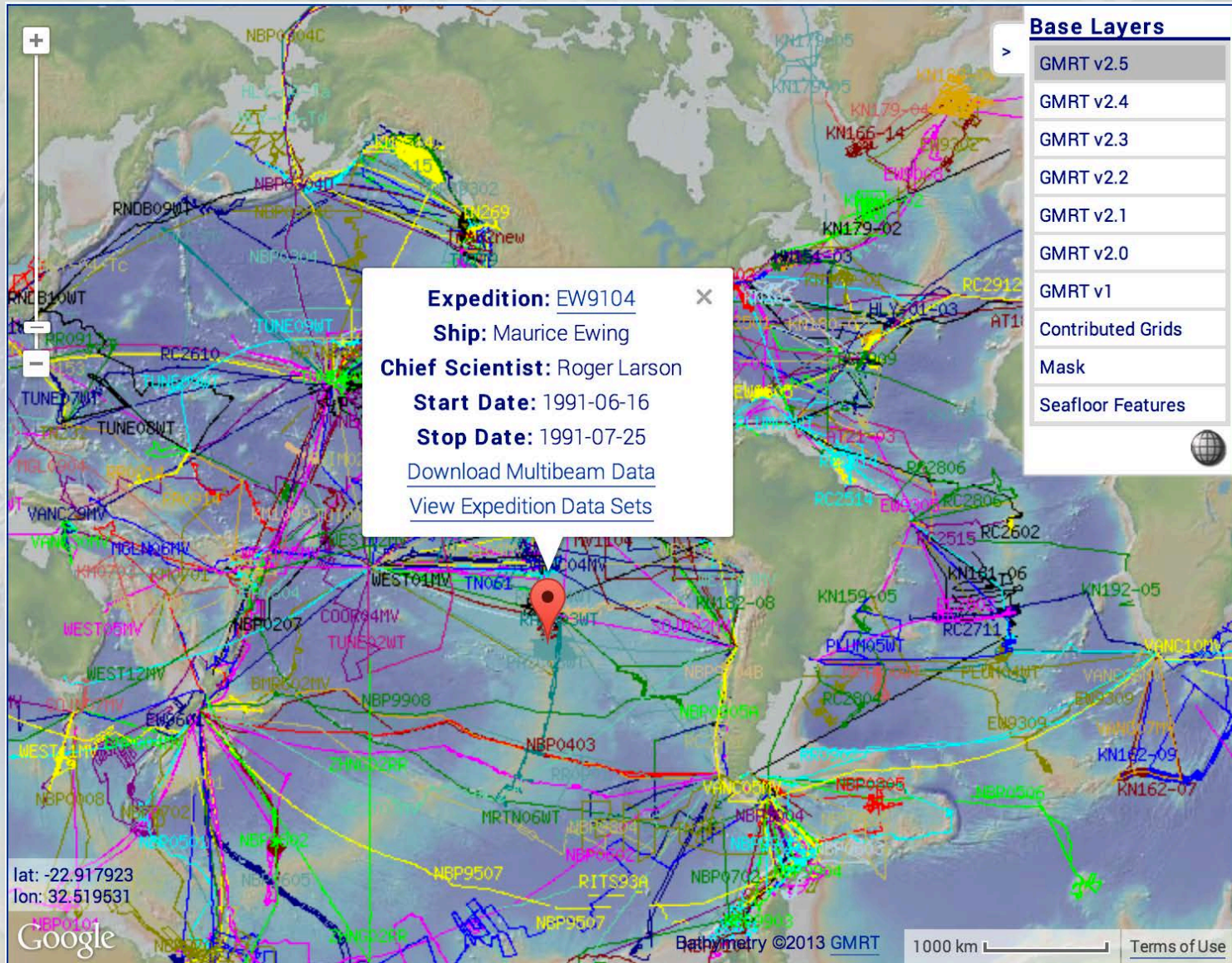
2013 Accomplishments

- Two Data Releases
 - GMRT v2.4 (+40 cruises) – *April 2013*
 - GMRT 2.5 (+42 cruises) – *Oct 2013*
- Improvements to workflow for prioritizing new data
- Enhanced Web Pages
 - Revised map interfaces
 - Enhanced attribution
 - More info about compilation and components

Improved Attribution Interface



Improved Attribution Interface



Enhanced Attribution Info

GMRT Contributors

Portal Links

- [Portal Home](#)
- [About GMRT](#)
- [What's New](#)
- [Related Links](#)
- **Contributors >>**
- [Known Issues](#)
- [MediaBank](#)
- [Tutorials](#)
- [GeoMapApp](#)
- [Virtual Ocean](#)
- [EarthObserver](#)

Access GMRT

- [Create Map/Grid](#)
- [Download for GoogleEarth](#)
- [Web Services](#)

Multibeam Surveys

Contributed Grids

Surveys not included

Current GMRT Version: 2.4

Total number of cruises in 100-m synthesis: 689

 [981107RR](#) *David Checkley (1998)*
Roger Revelle (*SeaBeam 2100*) GMRT v1

 [A112-24](#) *Richard Hey (1985)*
Atlantis II (*SeaBeam Classic*) GMRT v1

 [A114-02](#) *Robert Pockalny (1986)*
Atlantis II (*SeaBeam Classic*) GMRT v1

 [A118-21](#) *Stephen Hammond (1987)*
Atlantis II (*SeaBeam Classic*) GMRT v1

 [MGL1211](#) *Suzanne Carbotte (2012)*
Marcus G. Langseth (*Kongsberg EM122*) GMRT v2.4




 [MGL1214](#) *Vicki Ferrini (2012)*
Marcus G. Langseth (*Kongsberg EM122*) GMRT v2.3



More Info about GMRT

About GMRT

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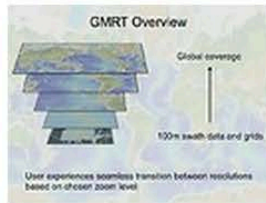
Access GMRT

- [Create Map/Grid](#)
- [Download for GoogleEarth](#)
- [Web Services](#)

- [Overview](#)
- [Source Data](#)
- [Data Preparation](#)
- [Access](#)
- [History](#)
- [Attribution](#)
- [Original Data](#)


GMRT Overview

The Global Multi-Resolution Topography (GMRT) Synthesis is a dynamically maintained global multi-resolution synthesis of terrestrial and seafloor elevation data available as images & gridded data values. Details about the tiling method and procedures used for creating and serving the GMRT synthesis is available in [Ryan et al., 2009](#) .



Source Data & Resolution

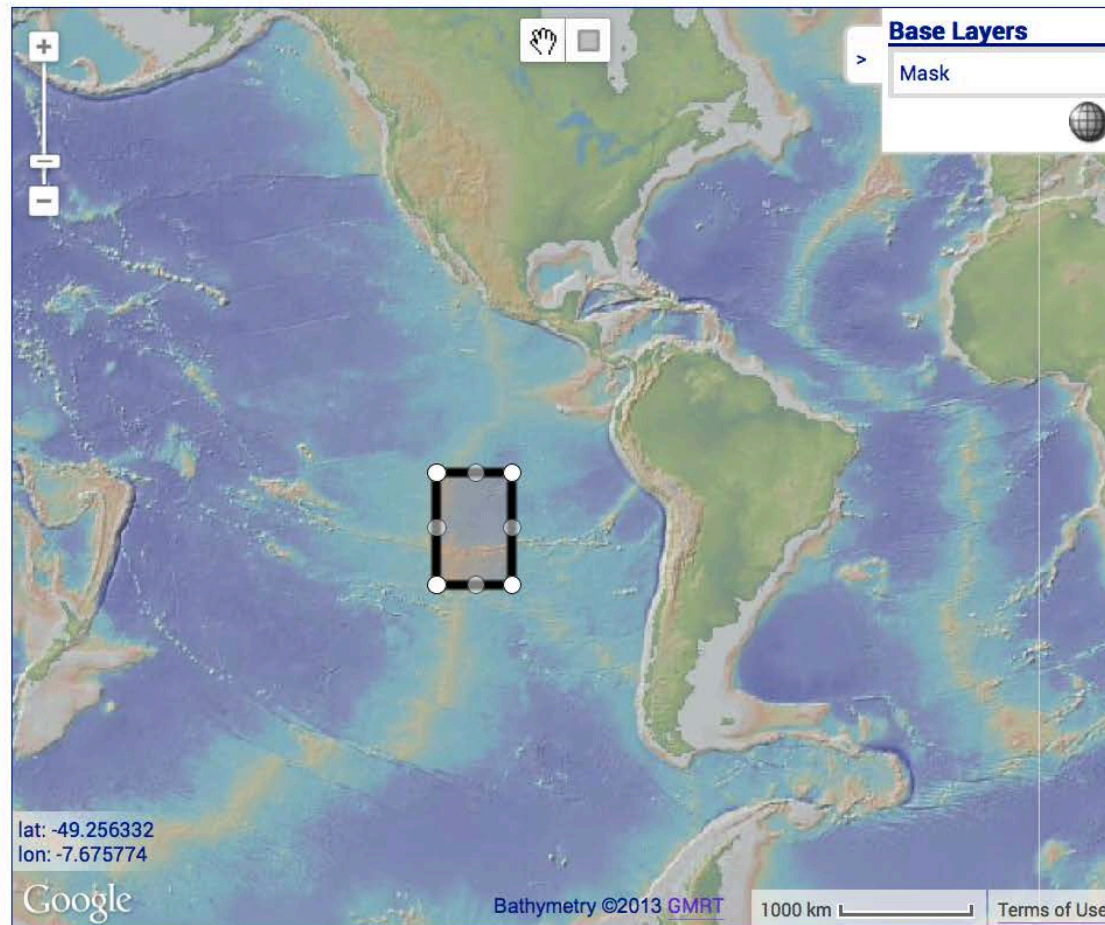
GMRT brings together a variety of elevation sources, which are delivered as multi-resolucional images and grids of land and ocean elevations. A mask layer is available that highlights the high-resolution data. Source data include:

- Multibeam swath bathymetry data (100-m resolution) from research cruises assessed, cleaned, processed and [curated by the MGDS](#). (Current version 2.4 contains 689 cruises)
- Terrestrial elevation data (10-m resolution) for portions of the US from the [USGS National Elevation Dataset \(NED\)](#) 
- Terrestrial elevation data (30-m resolution) from [NASA's Advanced Spaceborne Thermal Emission and Reflection](#)

Improved Custom Grid/Image Interface

GMRT MapTool

Make your own custom maps and grids from our [Global Multi-Resolution Topography \(GMRT\) synthesis \(Ryan et al., 2009\)](#), which combines [seafloor bathymetry data to ~100 m resolution](#), global topography data to ~30 m resolution, and topography data to ~10 m resolution for some areas of the US. Select a geographic region or focus/study site below to create a map. Additional contributed bathymetry data that are not part of the GMRT, including regional compilations and ultra-high resolution grids and images, can be accessed using our [search interface](#). **Current GMRT version: 2.4 (released April 2013).**



Select Site (sets coordinates)

Focus/Study Site:

(world)

Specify Coordinates

North:

-12.7089

West:

-114.9023

East:

-100.4883

South:

-32.3837

Create Map

2013 Collaborations

- Hosted GEBCO / Nippon Foundation Scholar
- Links to Reports & Info from complementary NSF-Funded MB efforts focused on US Academic Fleet (R2R, MAC)
- Updated 100-m content in Google Basemap
 - *GMRT v 2.4*

Next Steps...

- **LDEO 100m Compilation**
 - Ongoing growth of compilation
 - Further enhance metadata & QC reports
 - Enhance GMRT MapTool export options
 - More formats & resolution options
 - Include attribution info (BAG)
 - GMRT Web Coverage Service (WCS)
- **GEBCO 100 Concept**
 - Develop data sharing/licensing agreements & protocols
 - Workflow development for contributing new data

GEBCO 100: *Concept*

Regional & Global
Grids (> 500 m res.)
e.g. *GEBCO_08*

Contributed
Grids (< 500 m res.)

LDEO 100-m
compilation

+

100-m
contributed
grids

= GEBCO-100

