MARGINS Mini-Lessons – Phase 1….

- **2006-2009**
- **PIs:** Abers Manduca, Reed, Ryan
- **Activities**: several workshops, aimed at "producing" Mini-Lessons from MARGINS synthesis resources (TEI presntations, and other MARGINS managed content – but what happened was that most of the participants wanted to work with GeoMapApp on interactive content!
- **Products**: 34 Mini-Lessons of various sorts across the four MARGINS initiatves – targeting introductory through Senior-level courses.
- **Since then:**
  - Some of these original Mini-Lessons have been augmented by user-created contributions (assessments, etc.)
  - Others have been updated with updates to GeoMapApp
  - All have been reviewed by Cutting Edge via multiple protocols, with a number being designated as **Exemplary Teaching Activities**.

MARGINS Data in the Classroom

- About the Project
- About MARGINS Initiatives
- Search Full Mini-Lesson Collection
- Submit a Mini-Lesson
- Submit Instructor Story
- Webinars: Margins Science Highlights
- For Mini Lessons Authors

MARGINS

- Past MARGINS Workshops
- MARGINS Project
- MARGINS Education and Outreach

MARGINS Mini-lesson Collection

search

Help

Results 1 - 10 of **53 matches**

[A tour of the Mariana Subduction System]

This lesson presents a brief tour of the Mariana subduction system, an active continental margin in the west Pacific.

On the Cutting Edge Exemplary Collection

[Online Investigation of an Island Arc Volcano: Anatahan, Mariana Arc]

This activity is a Web investigation and research exercise starting with the 2003-present Anatahan volcanic eruptions in the Mariana arc, and concluding with a petrologic examination of published Mariana arc lavas data sets.

On the Cutting Edge Exemplary Collection

[The spectrum of fault slip]

Introduction to the different types of slip behaviors that can occur on subduction thrust, and comparative analysis of data sets derived from earthquakes and slow slip events to learn to discriminate among events.

[Central American Arc Volcanoes, Petrology, and Geochemistry]

This module teaches basic concepts in igneous petrology through relating hand specimen identification of lavas to major element geochemistry, using the Central American volcanic arc as an example.

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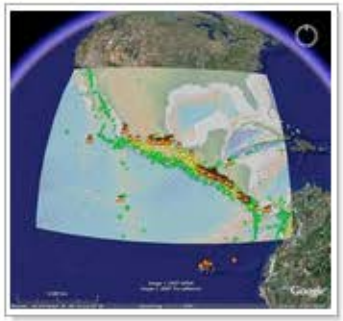
Plate Tectonics as Expressed in Geological Landforms and Events

Jeffrey G. Ryan, Department of Geology, University of South Florida Author Profile

▸ This activity is part of the On the Cutting Edge Exemplary Teaching Activities collection and has been reviewed by 1 other review process

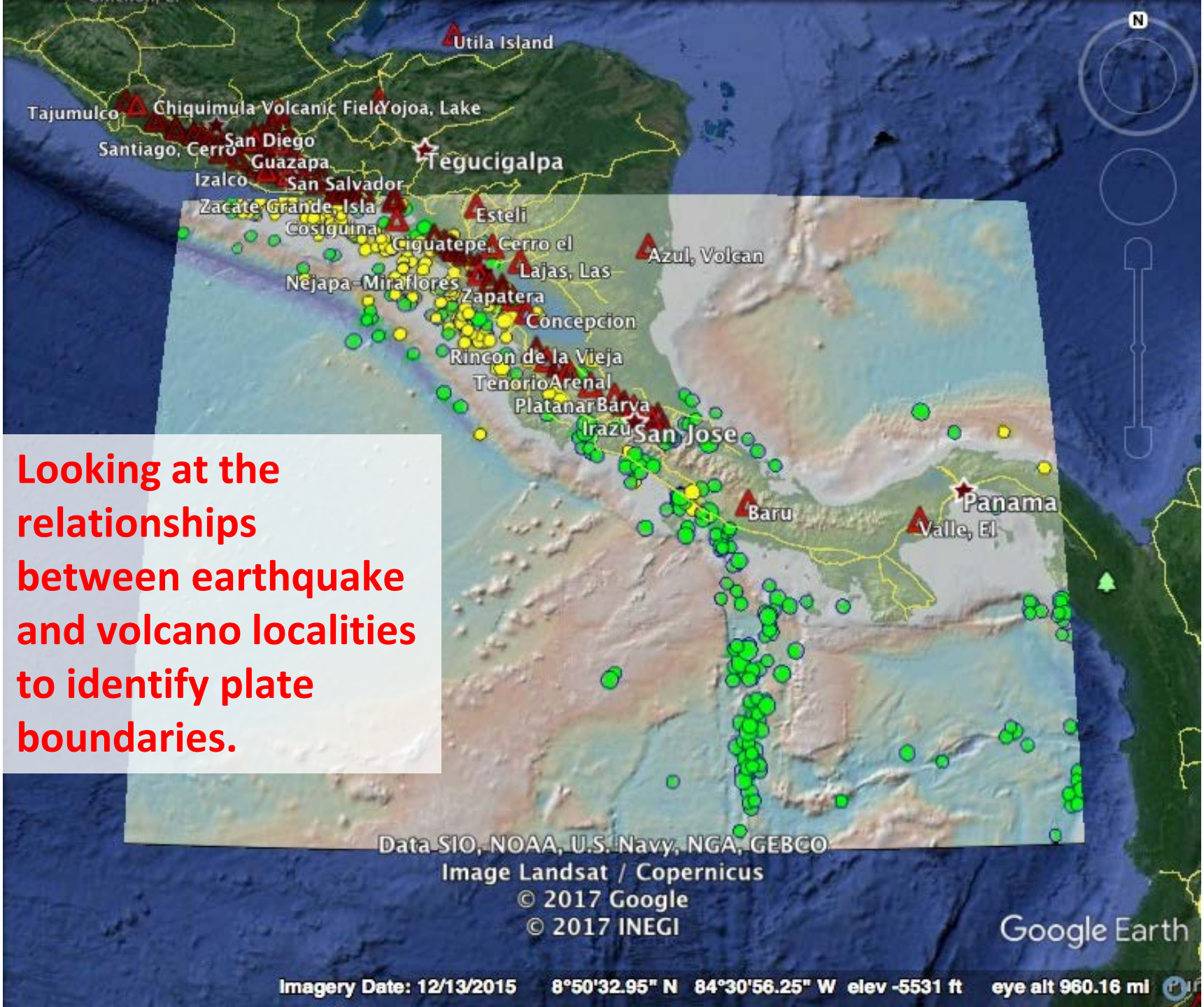
Summary

This activity seeks to have students analyze global data sets on earthquake and volcano distributions toward identifying major plate boundary types in different regions on the Earth. While the focus of the activity as written is on two NSF-MARGINS focus areas, any region of the Earth for which this data is available can be targeted. A secondary objective of the activity is to familiarize students with two publicly available resources for viewing and manipulating geologically-relevant geospatial data: Google Earth(TM) and GeoMapApp, a Java-based marine geoscience data resource and visualization tool maintained by the Marine Geoscience Data Systems at Lamont-Doherty Earth Observatory.



Learning Goals

Through this activity, students should become familiar with the concepts of plate boundaries and plate interactions, and the principles tacit in the theory of Plate Tectonics that most major geologic events occur during plate boundary interactions. Students should also become able to connect major geologic phenomena (volcanism, earthquake activity) to tectonic plate geometries, and recognize the "slop" in this relationship (i.e., phenomena often occur proximal to plate boundaries, but often not at the boundaries). Depending on how the activity is used, one can also have students model the kinds of data analysis skills that were necessary to the geoscientists in the 1960's who first looked at these kinds of global datasets.


Looking at the relationships between earthquake and volcano localities to identify plate boundaries.
Utila Island
Tajumulco
Chiquimula Volcanic Field
Yojoa, Lake
Santiago, Cerro
San Diego
Guazapa
Tegucigalpa
Izalco
San Salvador
Zacate Grande, Isla
Esteli
Cosiguina
Ciguatepe, Cerro el
Azul, Volcan
Lajas, Las
Nejapa-Miraflores
Zapatera
Concepcion
Rincon de la Vieja
Tenorio
Arenal
Platanar
Barva
Irazu
San Jose
Baru
Panama
Valle, El
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat / Copernicus
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Google Earth
Imagery Date: 12/13/2015
8°50'32.95" N 84°30'56.25" W elev -5531 ft
eye alt 960.16 mi

Student research exercise into both MARGINS website content, literature/IEDA data, and GE/GeoMapApp data.