IRIS
Active Earth Display
Cascadia and Basin and Range Content Modules

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Education and Outreach Specialist
IRIS
IRIS Earthquake Browser

Explore regional Seismicity

Discover Plate Boundaries

Examine earthquake databases

www.iris.edu/ieb
USArray Earthquake Wave Visualizations

Watch actual earthquake waves move across the USArray.

New animations available Within hours of every large Earthquake occurrence.

http://www.iris.edu/hq/programs/education_and_outreach/visualizations
The Active Earth Display is:

An interactive, customizable, real-time earth science display and educational tool for National Parks, Museums, University Lobbies, Libraries, Schools, Planetariums, Aquariums, …
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Iris  Active Earth Displays

- Inspire public interest in the science of seismology and related fields
- Demonstrate that we live on an active planet
- Highlight active research and geophysics data
- Written for general museum audience
- Easily customizable
- Automatically updated
- Over 75 accounts with over 50,000 annual users
The Active Earth Display is:

Free:

- Operating System software
- IRIS developed content (70 pages and growing)
- Content from users network
- Free account through IRIS website
- Online forum

You Provide:

- Windows or Mac computer
- Internet connection
- 1280 x 1024 touch screen monitor

Optional:

- One screen table top kiosk
- One screen floor kiosk
- Two screen floor kiosk
The Active Earth Display is:

Easily Customized:

Choose content pages
Add links to your web pages
Create new content pages

Interactive or non-interactive:

Touch screen monitor
Monitor and mouse/trackball
Monitor behind glass no mouse
- auto advance
Where can you find Iris Museum Displays?

American Museum of Natural History, New York City
Smithsonian Museum of Natural History, Washington, DC
Franklin Institute, Philadelphia, PA
Birch Aquarium, Scripps Institution of Oceanography, La Jolla, CA
Carnegie Museum of Natural History, Pittsburgh, PA
New Mexico Museum of Natural History, Albuquerque, NM
Maryland Science Center, Baltimore, MD
Sunset Crater National Monument, Flagstaff, AZ
National Science Foundation Headquarters, Washington, DC
Congressman and Senators offices, Capital Hill, Wash, DC
State Geologists Visitor Centers in current USArray states
Amundsen-Scott Station, The South Pole, Antarctica
Your National Park, planetarium, museum, visitor center, library, school
### Active Earth Software

**Entry link:**
- 10

**Change image?**
- No - leave as is

**Image to upload:**
- [Browse] [Clear File]

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**Topic 4**

This is the only topic you can currently delete.

**Entry link:**
- 10

**Change image?**
- No - leave as is

**Image to upload:**
- [Browse] [Clear File]

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**LINKS**

Select links using the link type and name popup menus on the left. Click on column headers for more information.

<table>
<thead>
<tr>
<th>#</th>
<th>Link type</th>
<th>Link name</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cascadia</td>
<td>1-Cascadia Attractor Screen with 10</td>
<td><a href="http://www.iris.edu/ewd2/content/cascadia/attraction_links_1000.html">http://www.iris.edu/ewd2/content/cascadia/attraction_links_1000.html</a></td>
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<tr>
<td>2</td>
<td>Cascadia</td>
<td>2-GQ: The Shaking Truth</td>
<td><a href="http://www.iris.edu/ewd2/content/cascadia/earthquakes/mgs.using_true.html">http://www.iris.edu/ewd2/content/cascadia/earthquakes/mgs.using_true.html</a></td>
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<td>3</td>
<td>Cascadia</td>
<td>3-GQ: Regular Rumbles</td>
<td><a href="http://www.iris.edu/ewd2/content/cascadia/earthquakes/mgs.rumbles.html">http://www.iris.edu/ewd2/content/cascadia/earthquakes/mgs.rumbles.html</a></td>
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<td>4</td>
<td>Cascadia</td>
<td>4-GQ: Three Ways to Tell Shock</td>
<td><a href="http://www.iris.edu/ewd2/content/cascadia/earthquakes/mgs.three_ways_shock.html">http://www.iris.edu/ewd2/content/cascadia/earthquakes/mgs.three_ways_shock.html</a></td>
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<td>5</td>
<td>Cascadia</td>
<td>5-Volcanic: Why Active?</td>
<td><a href="http://www.iris.edu/ewd2/content/cascadia/volcanoes/mgs.active.html">http://www.iris.edu/ewd2/content/cascadia/volcanoes/mgs.active.html</a></td>
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<td>Cascadia</td>
<td>6-Volcanic: Historic PHN Eruptions</td>
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<td>7</td>
<td>Cascadia</td>
<td>8-Volcanic: Monitor Mt St Helens</td>
<td><a href="http://www.iris.edu/ewd2/content/cascadia/volcanoes/mgs.sthelen.html">http://www.iris.edu/ewd2/content/cascadia/volcanoes/mgs.sthelen.html</a></td>
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<td>Cascadia</td>
<td>9-Volcanic: Realtime Seismic Activity</td>
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<td>10-Volcanic: EWS Measuring of Mt St Helens</td>
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<td>11-Tsunami: In the United States</td>
<td><a href="http://www.iris.edu/ewd2/content/cascadia/tsunamis/mgs.tsunami_states.html">http://www.iris.edu/ewd2/content/cascadia/tsunamis/mgs.tsunami_states.html</a></td>
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<td>12-Tsunami: Computing Sumatra</td>
<td><a href="http://www.iris.edu/ewd2/content/cascadia/tsunamis/mgs.sumatra.html">http://www.iris.edu/ewd2/content/cascadia/tsunamis/mgs.sumatra.html</a></td>
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<td>12</td>
<td>Cascadia</td>
<td>13-Tsunami: Past seas Unbroken</td>
<td><a href="http://www.iris.edu/ewd2/content/cascadia/tsunamis/mgs.unbroken.html">http://www.iris.edu/ewd2/content/cascadia/tsunamis/mgs.unbroken.html</a></td>
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<td>13</td>
<td>Cascadia</td>
<td>14-Plate Tectonics: Chain in</td>
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<td>14</td>
<td>Cascadia</td>
<td>15-Plate Tectonics: Measuring with GPS</td>
<td><a href="http://www.iris.edu/ewd2/content/cascadia/plates/mgs.measure.html">http://www.iris.edu/ewd2/content/cascadia/plates/mgs.measure.html</a></td>
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<td>15</td>
<td>Cascadia</td>
<td>17-Plate Tectonics: Earthquake Measure</td>
<td><a href="http://www.iris.edu/ewd2/content/cascadia/plates/mgs.earthquake.html">http://www.iris.edu/ewd2/content/cascadia/plates/mgs.earthquake.html</a></td>
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</table>

**Test** **Setup** **URL parameters**

- ![Test](http://www.iris.edu/ewd2/content/cascadia/plates/mgs.test.png)
- ![Setup](http://www.iris.edu/ewd2/content/cascadia/plates/mgs.setup.png)
- ![URL parameters](http://www.iris.edu/ewd2/content/cascadia/plates/mgs.url_parameters.png)

**Timeout**

- **Timeout min:**
- **Timeout action:**

**Related?**

- ![Related?](http://www.iris.edu/ewd2/content/cascadia/plates/mgs.related.png)

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**The Active Earth display**

Use **CONFIG** and then **RESTART** the display.

**CONFIG** — Configures the display. Be sure to save your settings!

**RESTART** — Restarts the display, reloading settings from IRIS server.
Cascadia Module

4 Chapters
16 pages
Live data
Animations
Cascadia Module

Regular Rumbles
Earthquakes in the past two weeks
The map displays real-time data showing the locations of earthquakes that have happened in the past two months.
Stop back later to see if any new earthquakes have occurred.
Are you surprised how many earthquakes happened in the last two weeks?
We don’t feel most of them because they are too small.

Real-time Earthquakes

How do we measure all these earthquakes?

Seismograph
Distant earthquake occurs
This movie shows an old style seismometer recording an earthquake. As P-waves and S-waves from the earthquake pass by, they are recorded on a seismogram using a pen.

A modern EarthScope seismometer is digital and the size of a gallon paint can. It is usually buried several feet below ground and can record earthquakes from around the world. The seismogram is recorded as a digital computer file.

Chapters highlight live data
Global to regional comparisons
Basin and Range Module

Active Earth IRIS

Exploring the Basin and Range

Plate Tectonics
Continental rifting results in the development of long, parallel mountain ranges and valleys that have had dramatic impact on the history of the Basin and Range Province.

Earthquakes
As the region rifts, the landscape shifts, sometimes with violent consequences.

Volcanoes
As North America rips apart, rising hot mantle melts and spews lava across parts of the Basin and Range.

Monitoring
Scientific programs measure the moving landscape of the Basin and Range Province and help us appreciate how, when and why earthquakes and volcanic eruptions occur.

4 Chapters
16 pages
Live data
Animations
Basin and Range Module

Chapters start with General Overview
Moving to the Beat of a Different Drummer
Volcanoes and Earthquakes Far From a Plate Boundary

EarthScope instruments are measuring the motion of the Basin and Range province. The mountains are rising about 0.3 mm per year, the plates are extending 5 cm per year. Slow, but still moving.

Each arrow represents a speed (the length of the arrow) and direction (which way the arrow is pointing) that a single scientific GPS station has moved. The base of the arrow is the location of the moving GPS, and the head of the arrow is the direction it is moving.

Question
What might this region look like millions of years from now?

Answer

Chapters continue to specific details
Basin and Range Module

Beneath Your Feet
What’s Underneath the Basin and Range?

EarthScope is providing high resolution views of the Basin and Range using seismic tomography.

Question 1:
Why are there red colors under the Basin and Range?
Answer

Question 2:
Why are there blue colors under the eastern United States?
Answer

This is a low resolution image of what is going on 200 km beneath the surface of the Earth in the mantle, which is a layer of the Earth made up of very hot rock under enormous pressure. Blue colors mean relatively colder and harder rock, and red colors mean relatively warmer and weaker rock.

Updatable with latest research results!
Live Earthquakes

Small earthquakes occur around the world several hundred times per day. Explore earthquakes of magnitude four and greater that occurred as recently as today!

Updatable with latest live data!
## Active Earth Display Content Sets:

<table>
<thead>
<tr>
<th>Content Set</th>
<th>Availability</th>
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</thead>
<tbody>
<tr>
<td>General Seismology</td>
<td>Available</td>
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<tr>
<td>Africa Array</td>
<td>Available</td>
</tr>
<tr>
<td>Cascadia</td>
<td>Available</td>
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<tr>
<td>EarthScope/USArray</td>
<td>January 2010</td>
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<td>San Andreas</td>
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<td>PoleNet</td>
<td>Spring 2010</td>
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<td>Colorado Plateau</td>
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<td>YellowStone</td>
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<td>New Madrid</td>
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<tr>
<td>Rapid Response EQ Page</td>
<td>December 2009</td>
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<tr>
<td>Your Content</td>
<td>Tomorrow</td>
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