

Earthquakes in Action

Incorporating Multimedia, Internet Resources, Large-scale Seismic Data, & 3-D Visualizations

into Innovative Activities & Research Projects for
Today's High School Students

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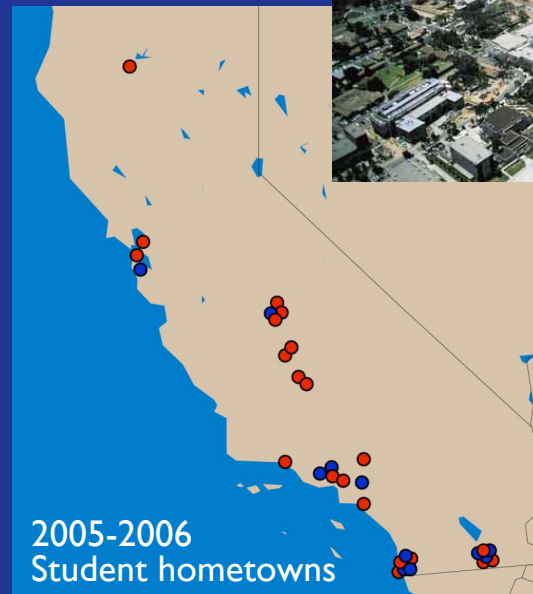
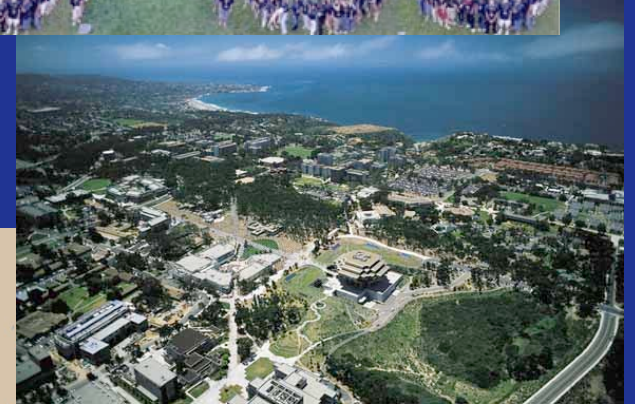


COSMOS @ UCSD
California State Summer School for Mathematics and Science

COSMOS @ UCSD

California State Summer School for Mathematics and Science

- 4-week summer program
- 9th - 12th grade
- 100+ students, ~20 students per cluster
- *Earthquakes in Action*



Earthquakes in Action Curriculum

- Lecture & Lab
- Research Project

Southern CA quakes
Parkfield
Global seismicity
Earth's largest quakes

Seismic waves
Seismometers
Plate tectonics
Faulting behaviors
Global seismicity
California faults & quakes
Tsunamis
GPS measurements



Example Lab: Plotting Global Earthquakes

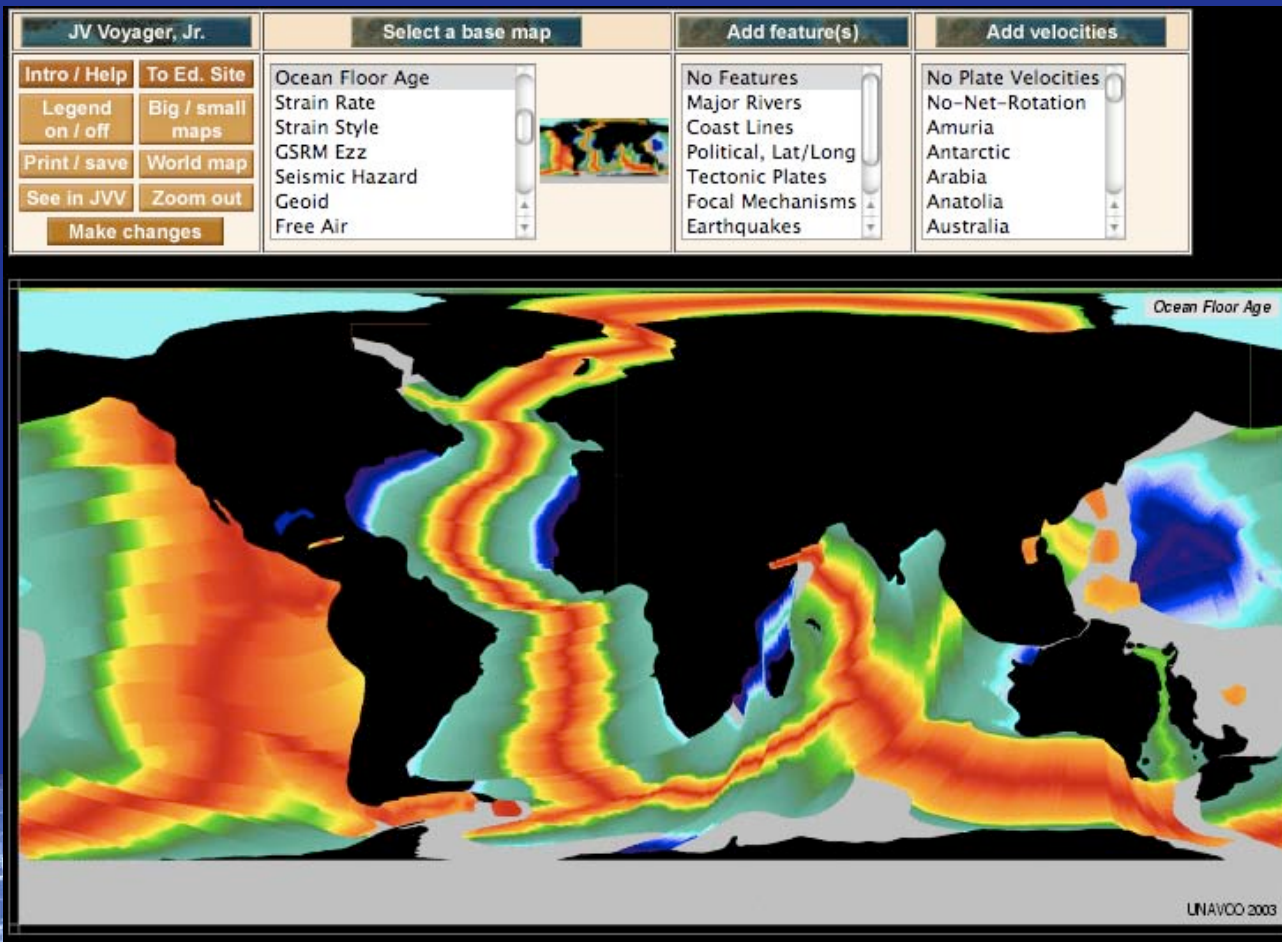
- Earthquake data
- Students collected & plot locations



Example Lab: Plate Tectonics

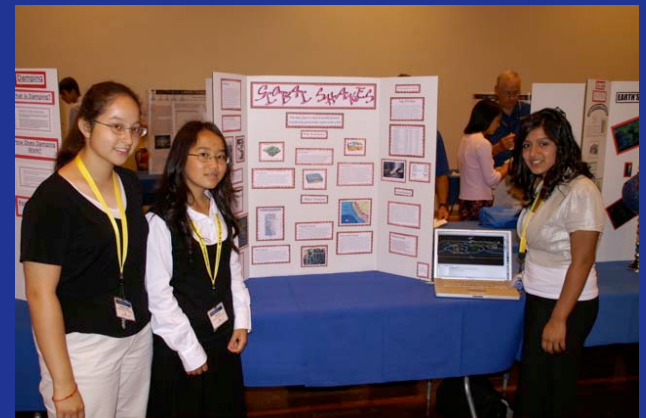
Jules Verne Voyager Mapping Tool
(UNAVCO/EarthScope):

<http://jules.unavco.org/VoyagerJr/Earth>



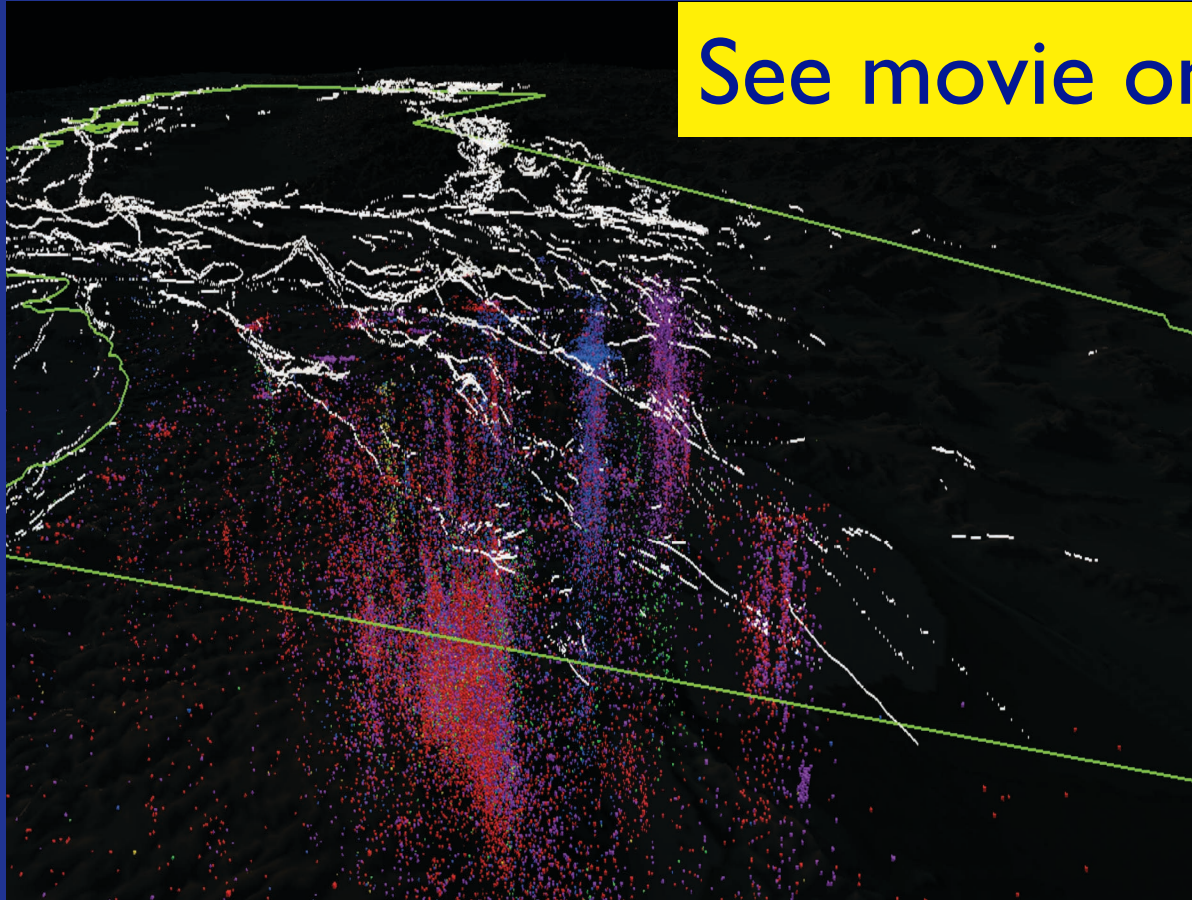
Student Research Projects

- *Science fair* type project, teams of 2-3
- Students collect seismic data from scientific internet database
- Students evaluate:
 - earthquake locations
 - earthquake magnitudes
 - sequence of events
 - geologic relationships
- Students use visualization tools (e.g., Fledermaus, iView3D) to explore and present seismic data



Southern California Earthquakes

Data source: Anza Broadband Seismic Data Collection (1985-2005)



See movie on website

Southern California Earthquakes

See movie on website



Hector Mine Earthquake
(1999)

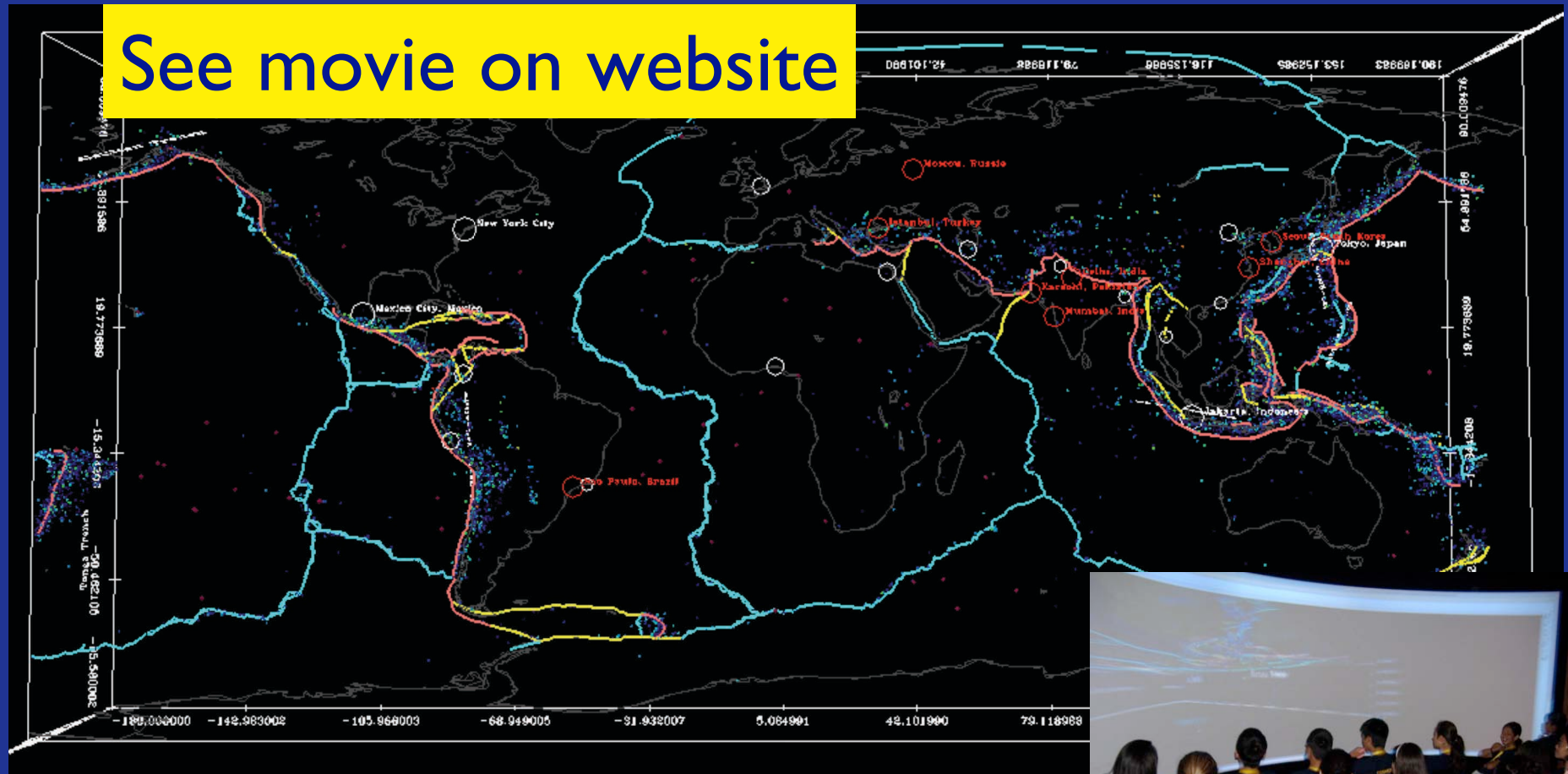


Landers Earthquake
(1992)

Global Events

Data source: Engdahl Centennial Earthquake Catalog (1900-2002)

See movie on website



Get More Info

Course website:

<http://topex.ucsd.edu/cosmos/earthquakes>

Earthquakes in Action

COSMOS 2006

SIO Visualization Center:

<http://siovizcenter.ucsd.edu/>



SIO Visualization Center
AT SCRIPPS INSTITUTION OF OCEANOGRAPHY
INSTITUTE FOR GEOPHYSICS & PLANETARY PHYSICS

Earthquake Education Workshop (USGS, SIO, SCEC)

<http://siovizcenter.ucsd.edu/workshop>

