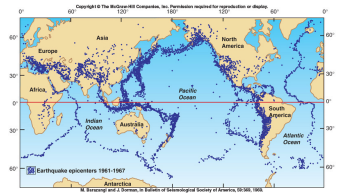


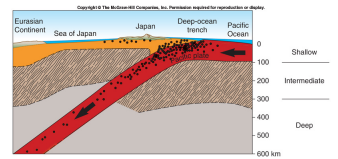
# SIO 15 LECTURE 05: EARTHQUAKES AND PLATE BOUNDARIES

Leftovers from Lecture 4  
Announcements

## Plate Boundaries and Earthquakes

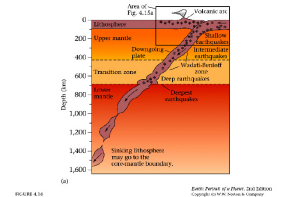


## Earthquakes in Subduction Zones



## The Wadati-Benioff Zone

## The Deepest Earthquakes

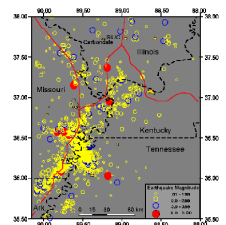


## The Largest Earthquakes

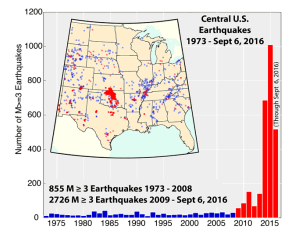


## Intraplate Earthquakes

New Madrid 1811/12



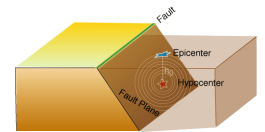
# Seismicity in Oklahoma



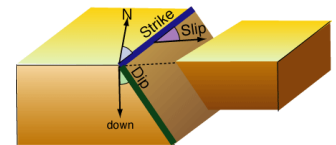
## Induced Seismicity



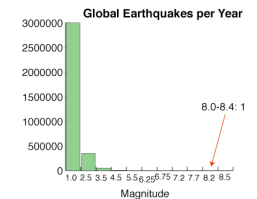
## An Earthquake along a Fault (see class website)



## Parameters of an Earthquake along a Fault (see class website)



## Earthquake Statistics

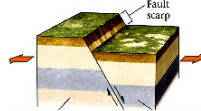


## Earthquake Types see short video 5a

### Analogy between Plate Boundaries and Earthquake Types

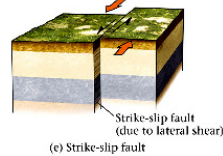
#### Divergent Plate Boundary

Normal Events



#### Transform Plate Boundary

Strike-slip Events

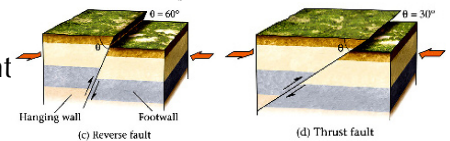


#### Convergent Plate Boundary

Reverse and Thrust Event

*very dangerous*

Shallow and Blind Thrust Events



## Earthquake Magnitudes

see short video 5b

Mercalli Intensity



Richter Magnitude

Moment Magnitude