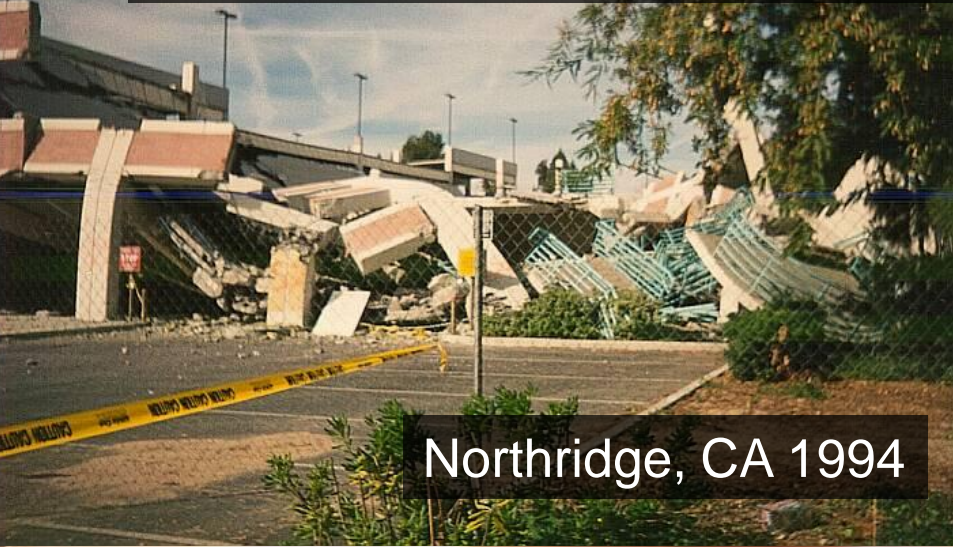


GRAB a BOOK...

1. Have you ever, or do you know anyone who has felt an Earthquake? When was it?
2. What were you (or they) doing when the Earthquake happened?
3. Did you feel excited? Scared? Worried?
Why?
4. What do you think causes Earthquakes?

Earthquakes



Northridge, CA 1994



Loma Prieta, CA 1989

“What is a...

EARTHQUAKE”

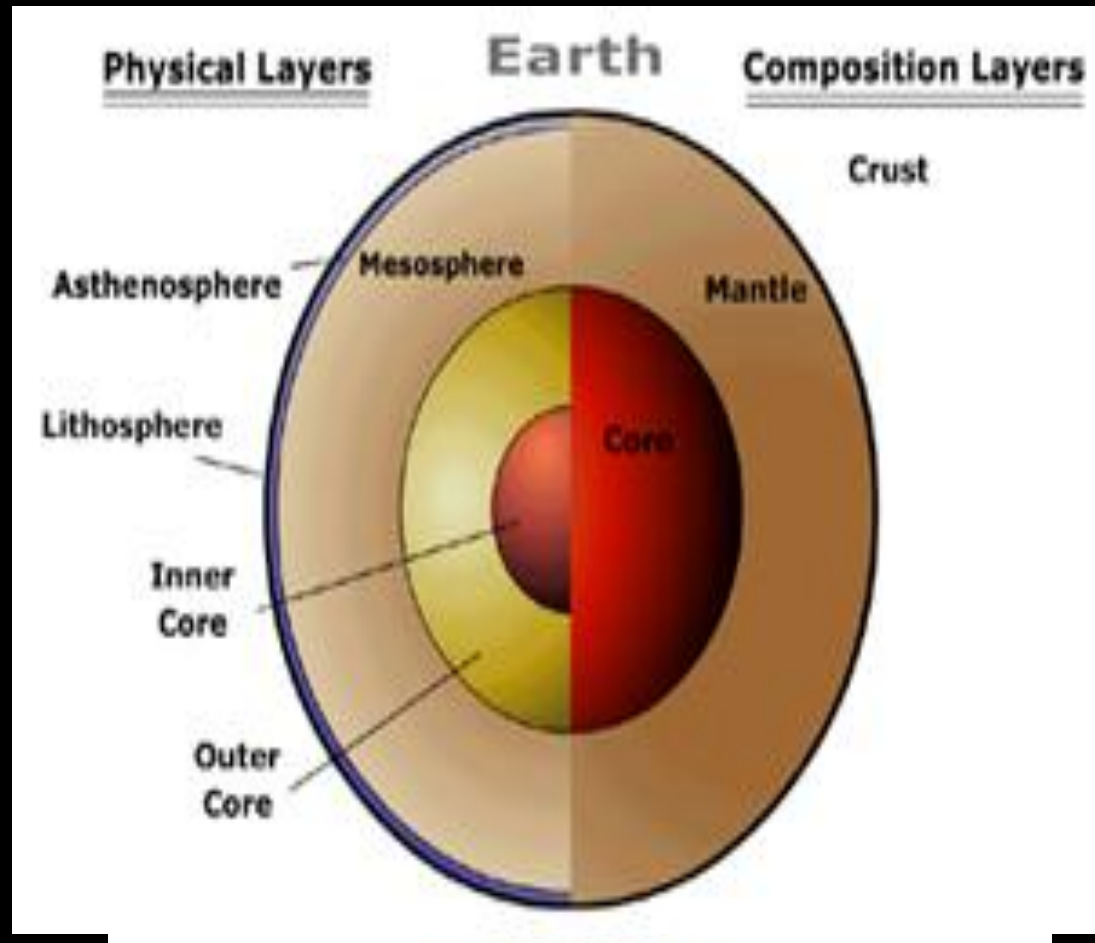


Chapter 8, Section 1

Earth has layers

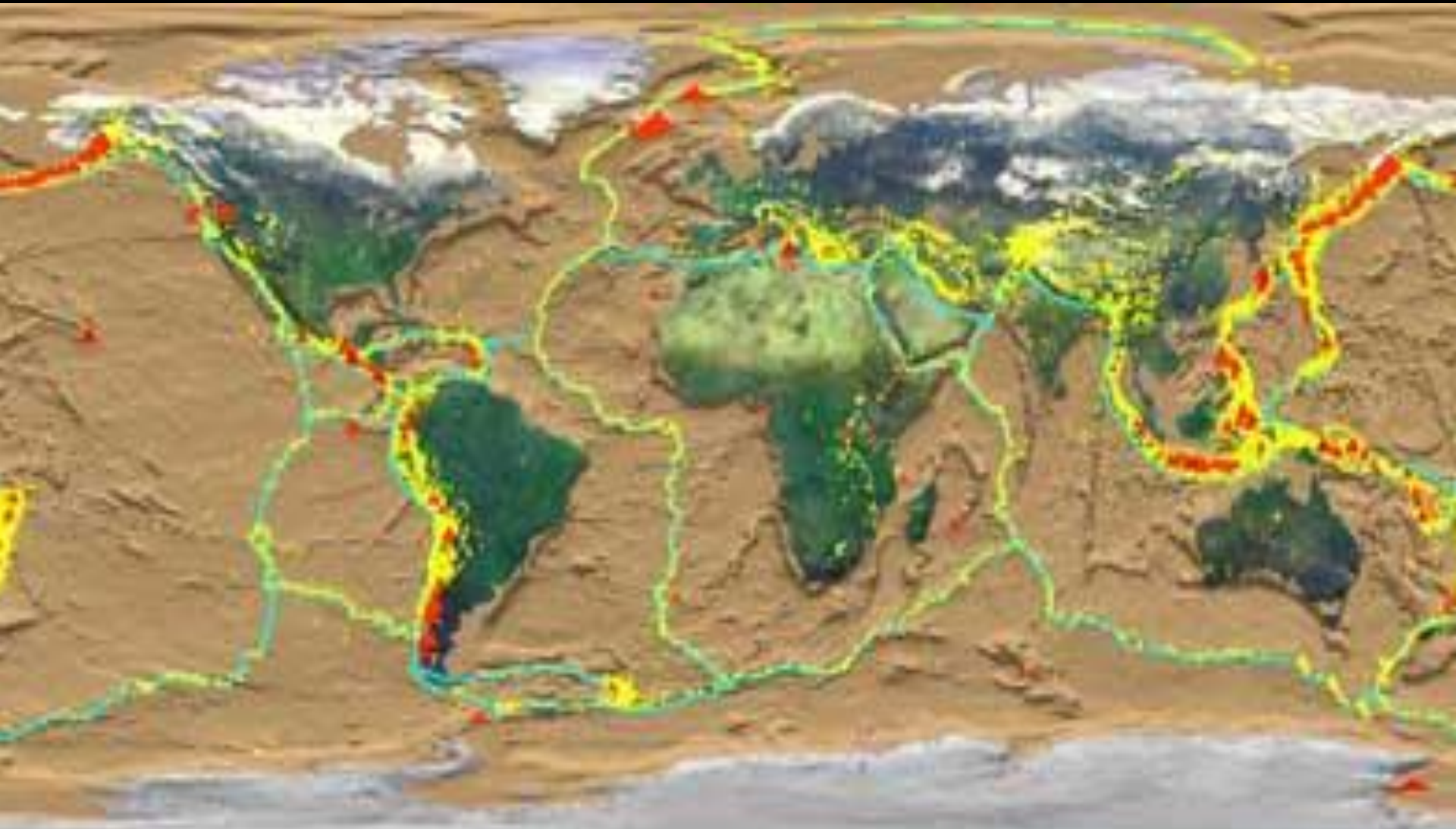
“LITHOSPHERE”

- Top layer
- Where we live
- Crust & top of Mantle



LITHOSPHERE

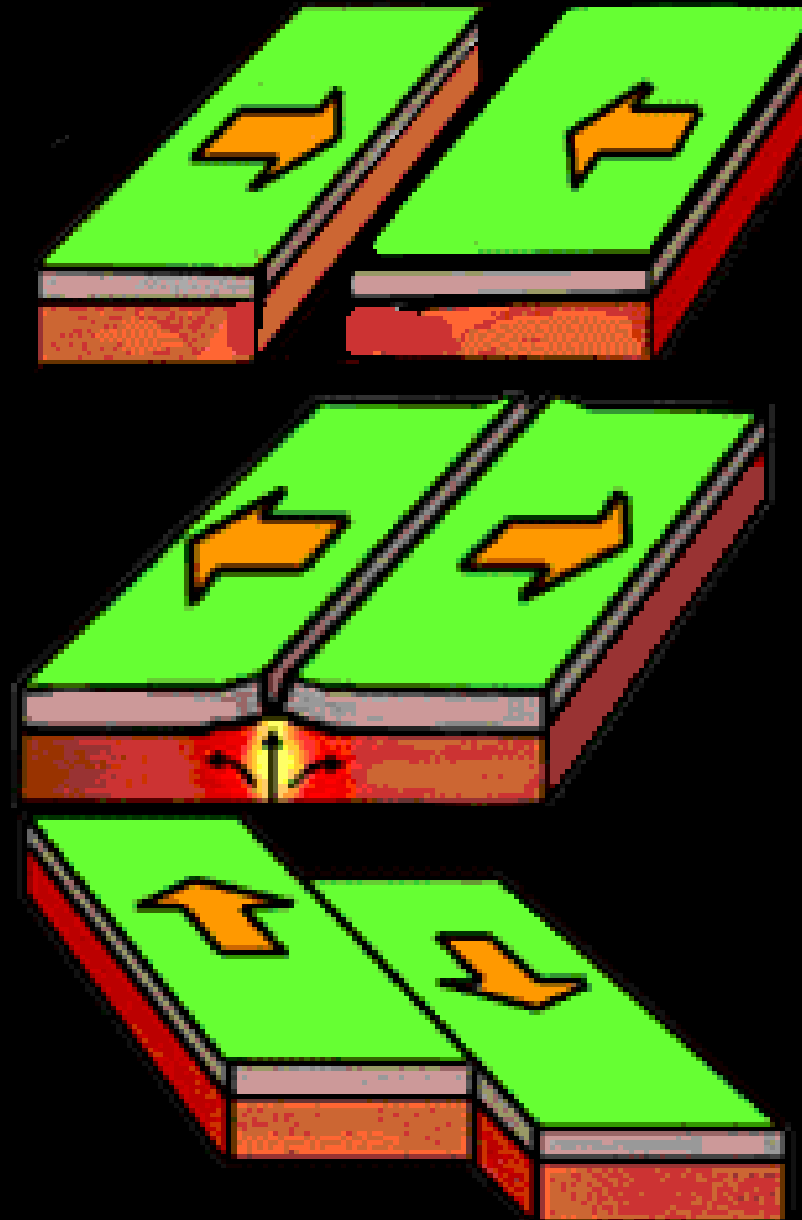
– Divided into **7 “PLATES”**



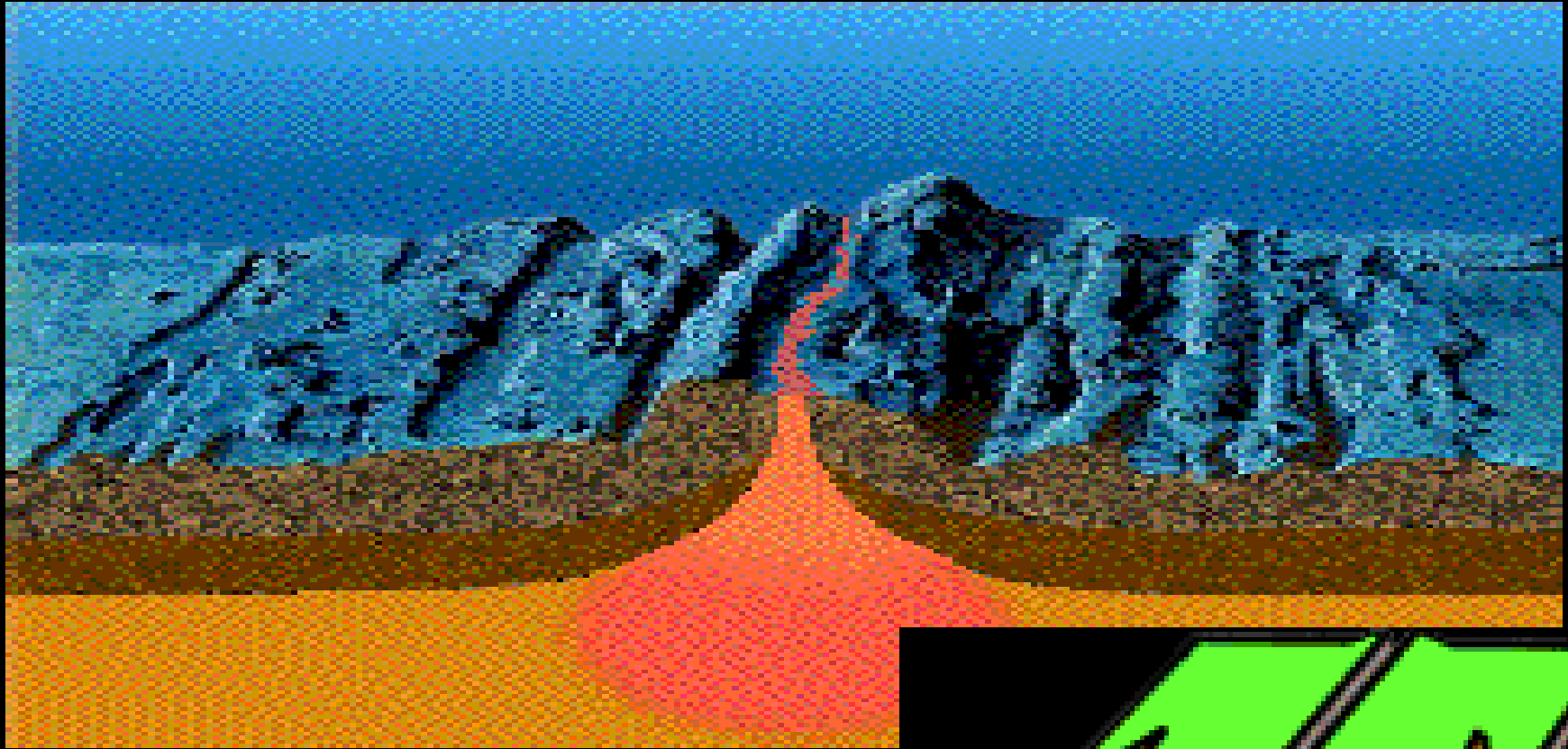
Plates Move!

3 “BOUNDARIES”

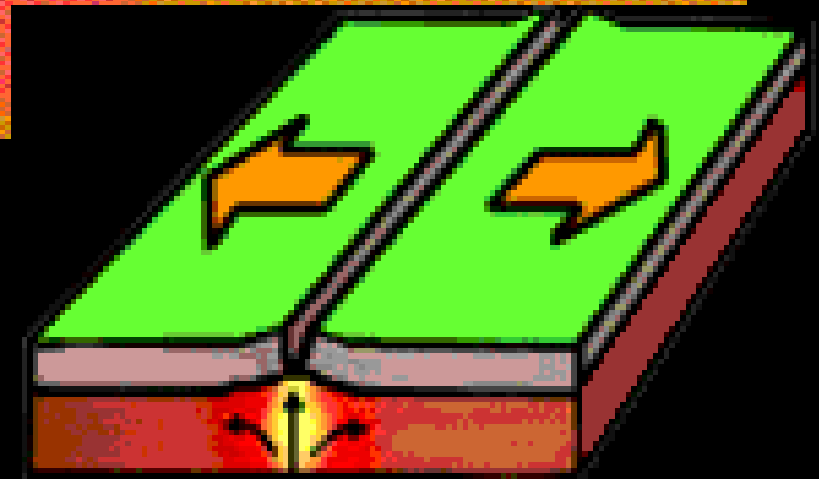
1. Smash together
– **CONVERGENT**
2. Spread apart
– **DIVERGENT**
3. Slide beside
– **TRANSVERSE**



Which kind of Boundary is this?



Divergent Boundary!



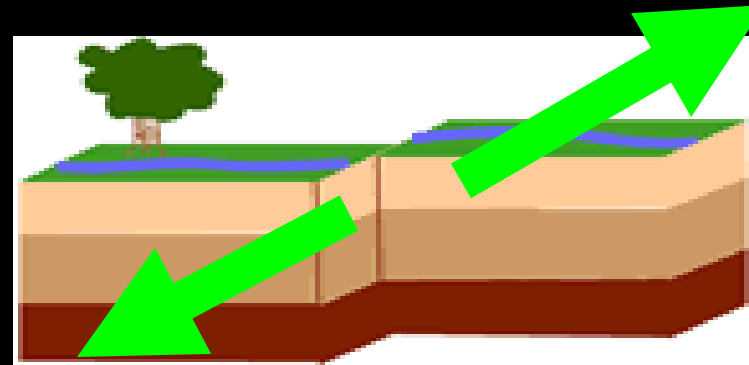
Moving Plates = crack Lithosphere



“Faults” = Cracks in earth

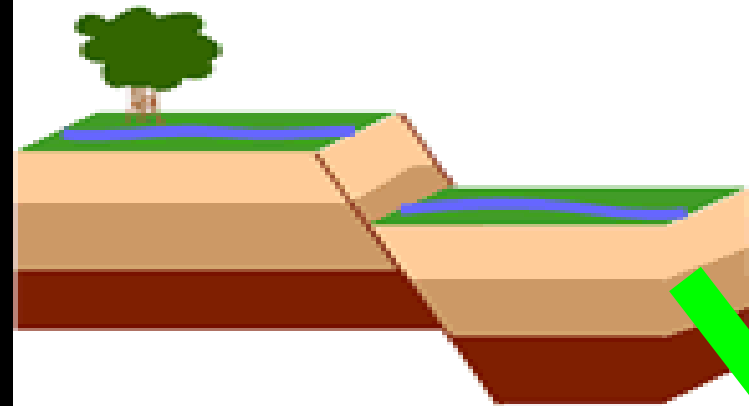
3 Fault Types

1. Strike-Slip Fault



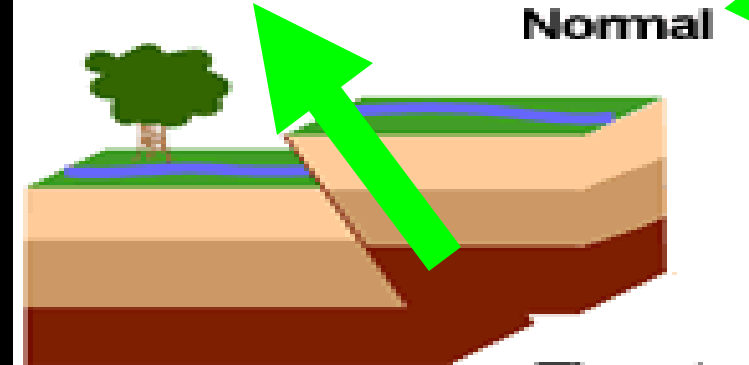
Strike-slip

2. Normal Fault



Normal

3. Thrust Fault



Thrust

San Andreas Fault

- Pacific Plate *against* North American Plate
- Causes Earthquakes in CA!
- **Where will it take us?**
- **CA → Island!**



Why do Earthquakes Happen?

Friction!

- Between moving rocks
- @t Faults

1. Plates “Stick”

2. Release

- At weakest point
- “FOCUS!”

3. Vibrate!

- Energy “Waves”

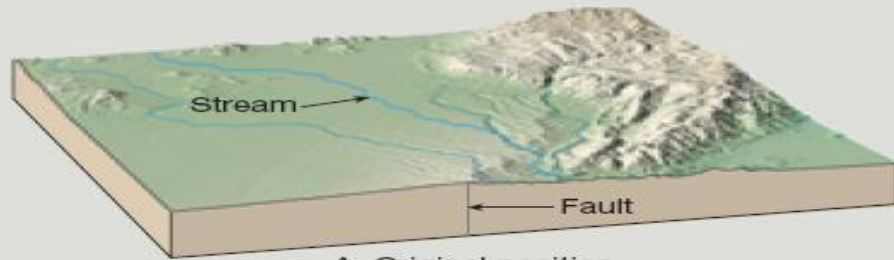


Elastic Rebound Hypothesis

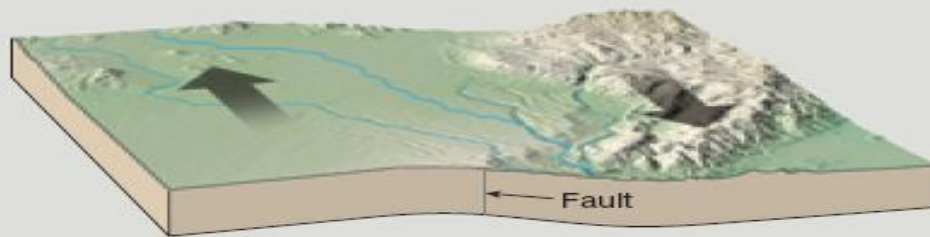
- When Earthquakes happen...
 - **rock returns elastically**
 - (almost) to its **original shape**

Elastic Rebound Hypothesis

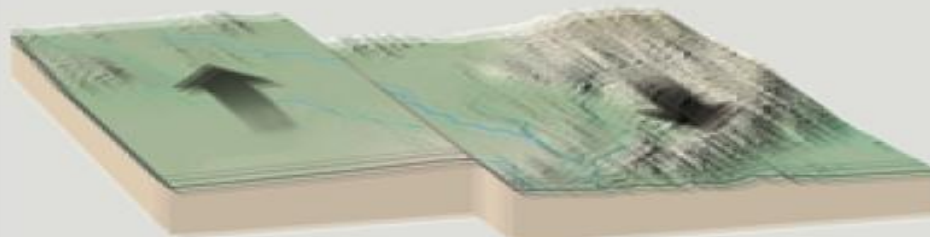
Deformation of rocks



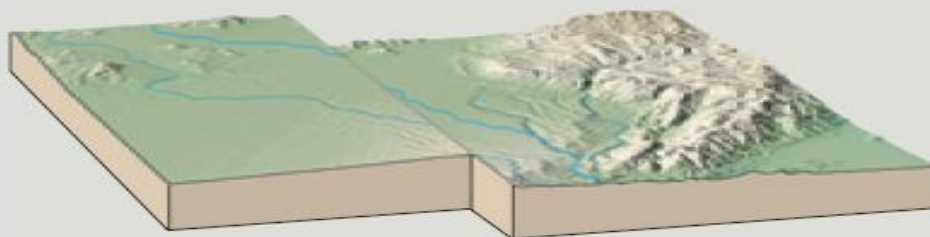
A. Original position



B. Buildup of strain



C. Slippage (earthquake)



D. Strain released

Deformation of a limber stick



A. Original position



B. Buildup of strain



C. Rupture



D. Strain released

1. Focus

- Earthquake starts
- Inside Earth

Fault scarp

Epicenter

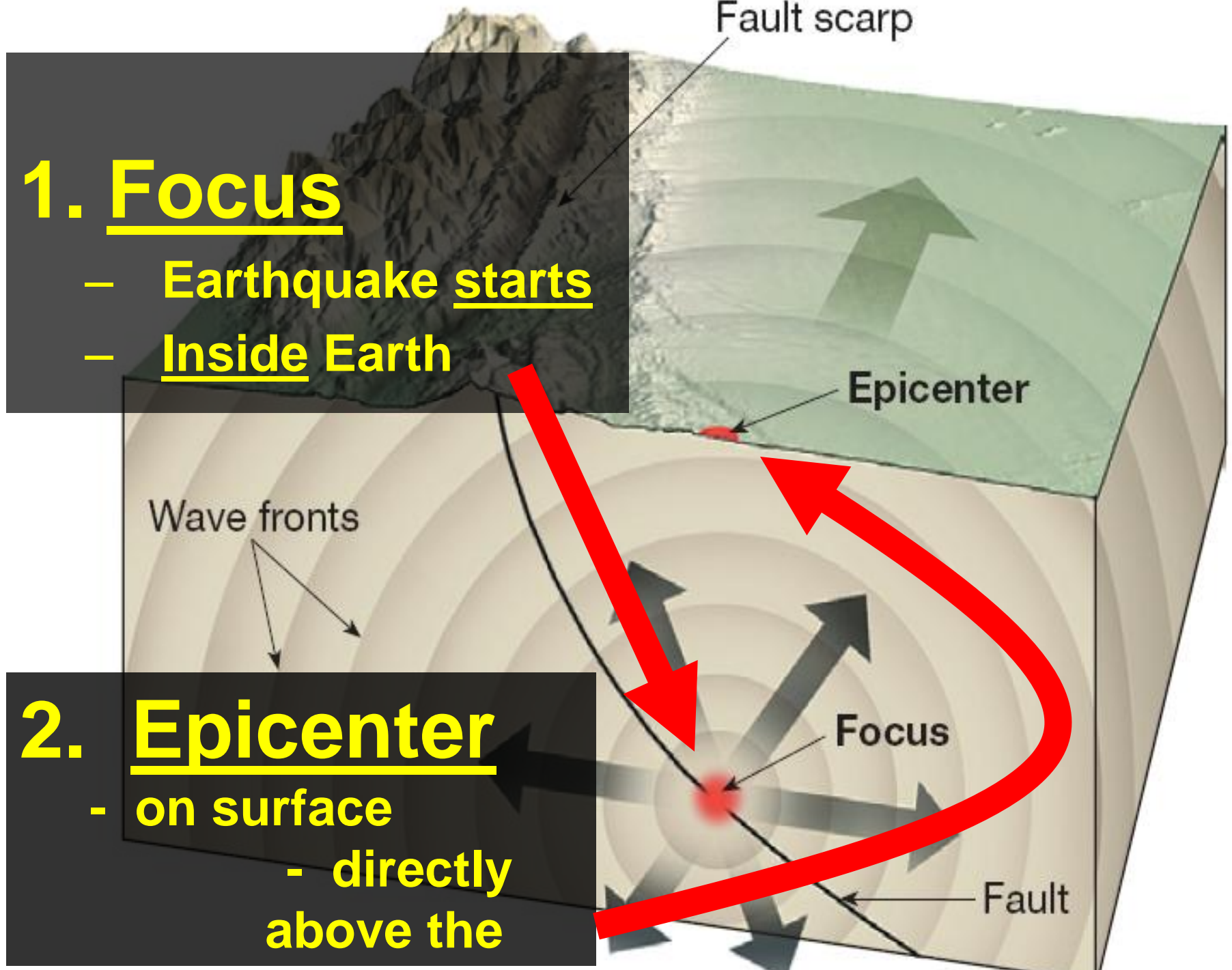
Wave fronts

2. Epicenter

- on surface
- directly above the

Focus

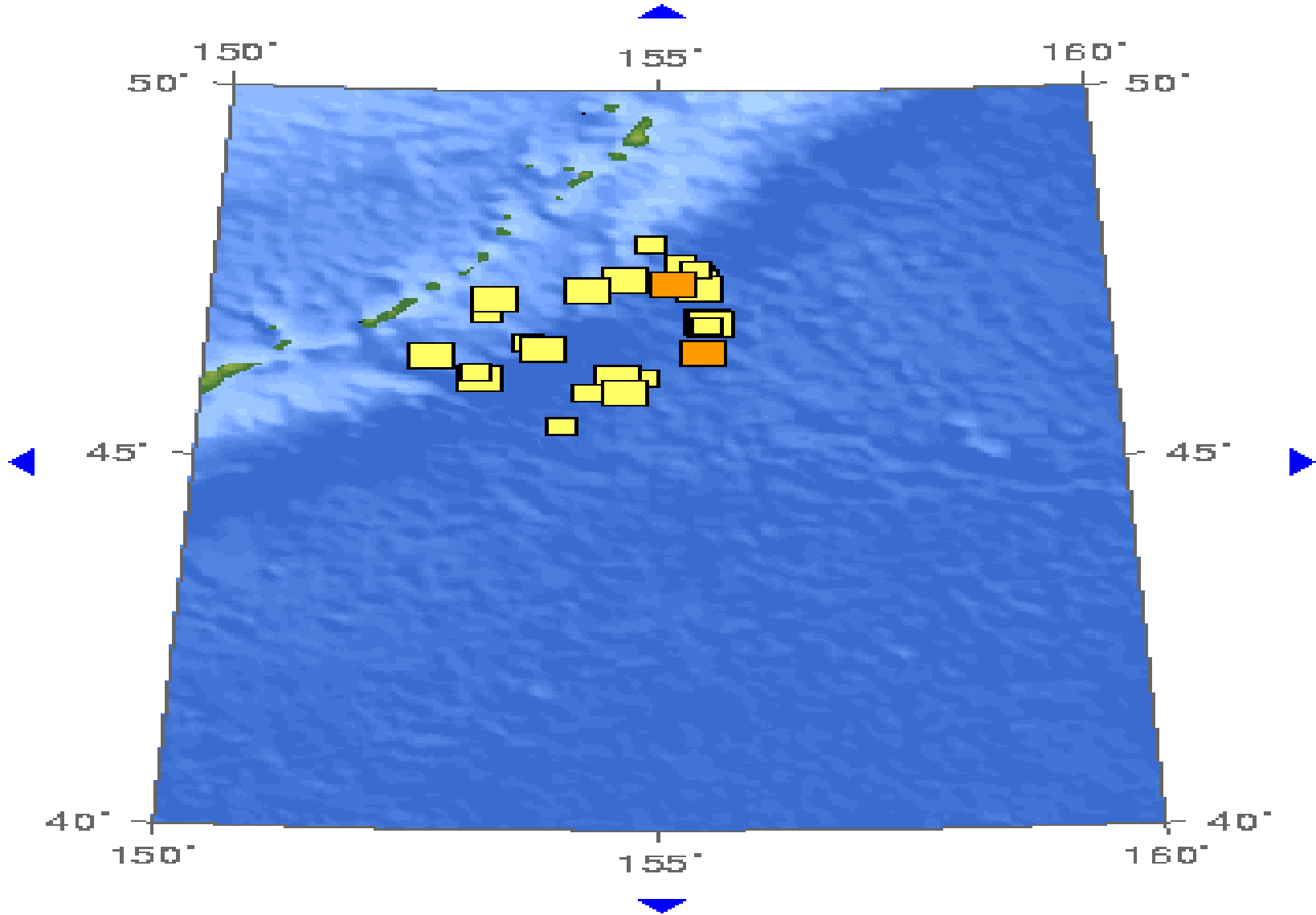
Fault



Aftershocks & Foreshocks

- Most movement along a fault happens during main earthquake
- **Aftershocks**
 - small earthquakes
 - after a major earthquake
- **Foreshocks**
 - small earthquakes
 - before a major earthquake

Tue Nov 28 15:47:12 UTC 2006
26 earthquakes on this map



Aftershocks as a result of November 15, 2006 earthquake
off the coast of Japan

Assignment

- Read Chapter 8, Section 1 (pg. 218-221)
- Do 8.1 Assessment #1-8 (pg. 221)

A.I.T. Videos

- Daily show intro
- http://www.thedailyshow.com/video/index.jhtml?videoId=85601&title=apocalypse-how&tag=generic_tag_global_warming&itemId=105061
- (For right before Global Swindle...explain that not all skeptics are crazy)
- Global swindle.
- <http://www.youtube.com/watch?v=2UohcpcfM4>
- Gore on Futurama (for right before AIT)
- <http://www.youtube.com/watch?v=bAggxIECe5M>