

Earthquakes

San Fernando, 1971



Loma Prieta, 1989



Pt Reyes, 1906

Caracus, Venezuela



Neckering, Australia, 1968

STRESS

STRAIN

STRESS

STRAIN

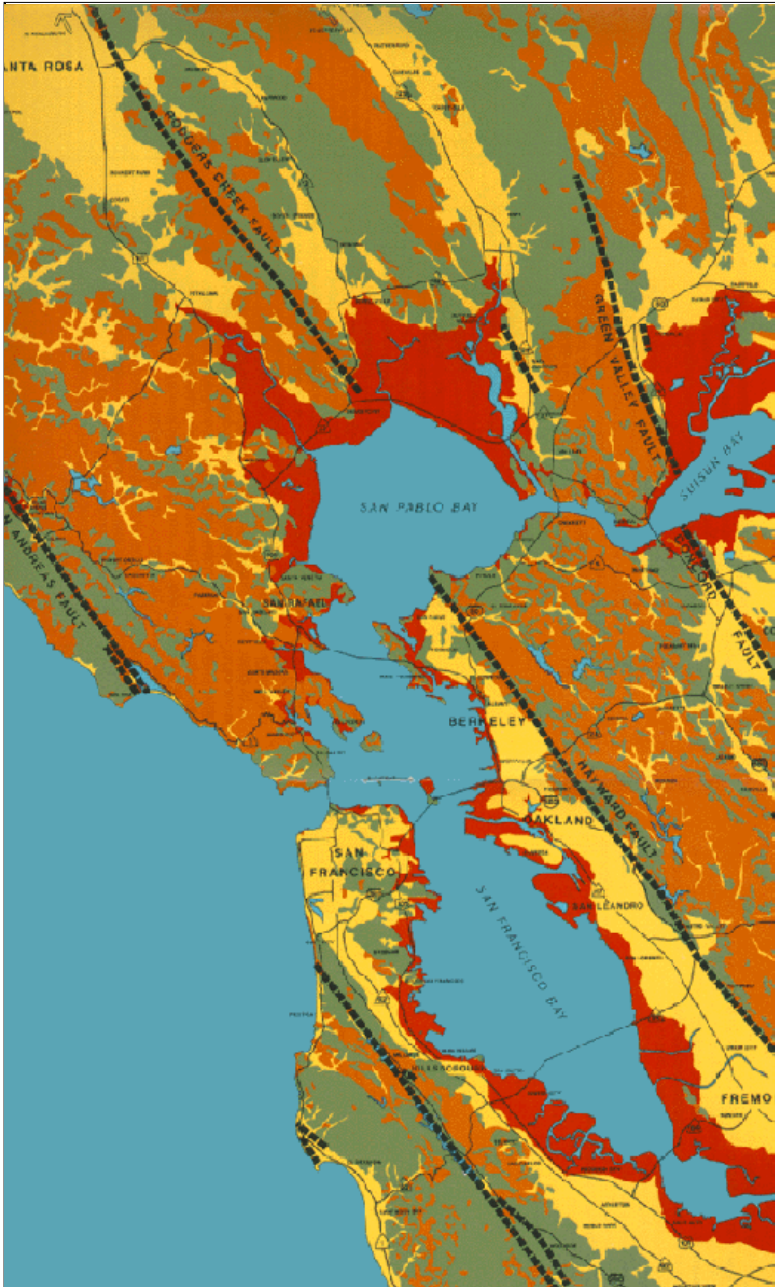
*What occurs **prior** to an earthquake?*

*What happens **during** an earthquake?*

*What can you see **after** an earthquake?*



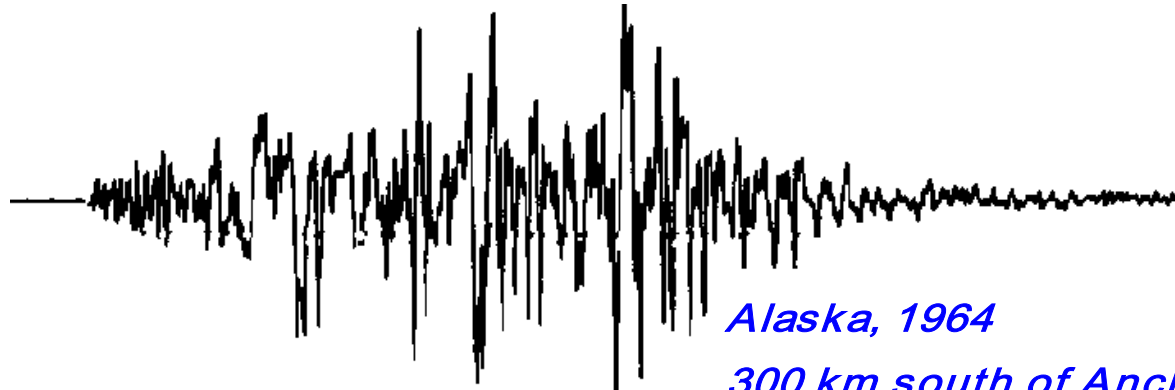
Kobe, Japan



San Andreas Fault System



seismic waves



Alaska, 1964

300 km south of Anchorage

P waves

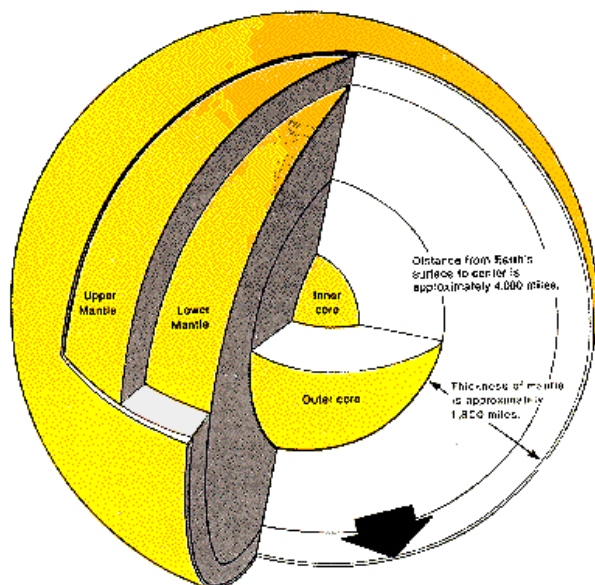
*push - pull or compressional waves
primary*

S waves

*shear waves, secondary
Raleigh waves, surface*

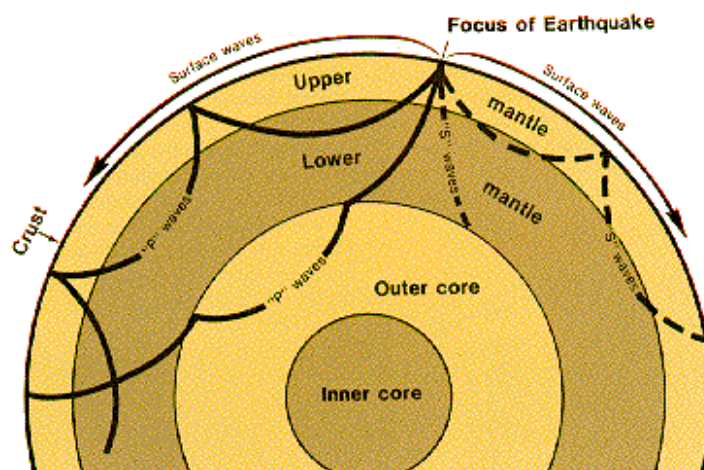
others

60+ types of wave motion

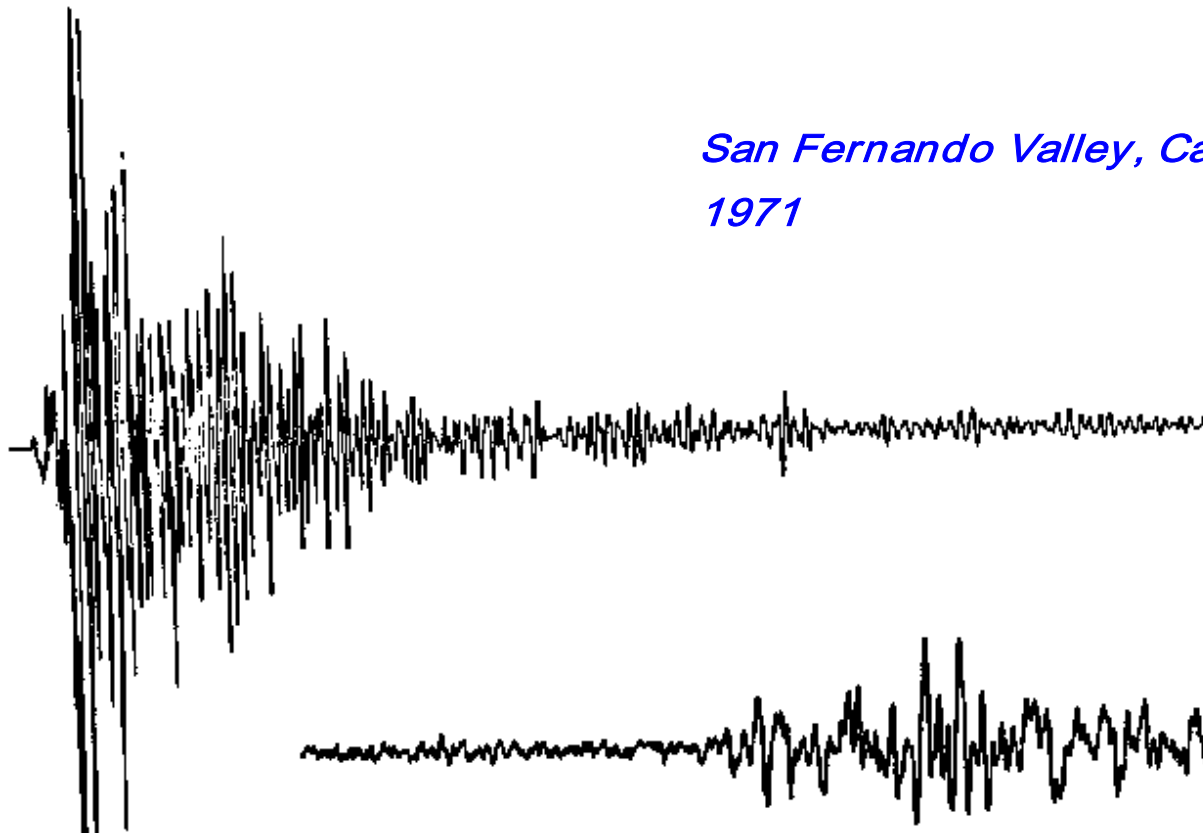


Seismic waves can help determine the divisions of the internal Earth

Focus - Point of displacement
Epicenter - Point of surface of Earth above focus



Seismograms



*San Fernando Valley, California
1971*

Hollister , California

Richter Magnitude Scale

1.0 = small blast at construction site , 6 oz of TNT

4.5 = 32 tons of TNT

7.5 = 1,000,000 tons of TNT

12.0 = 1,000,000,000 tons of TNT

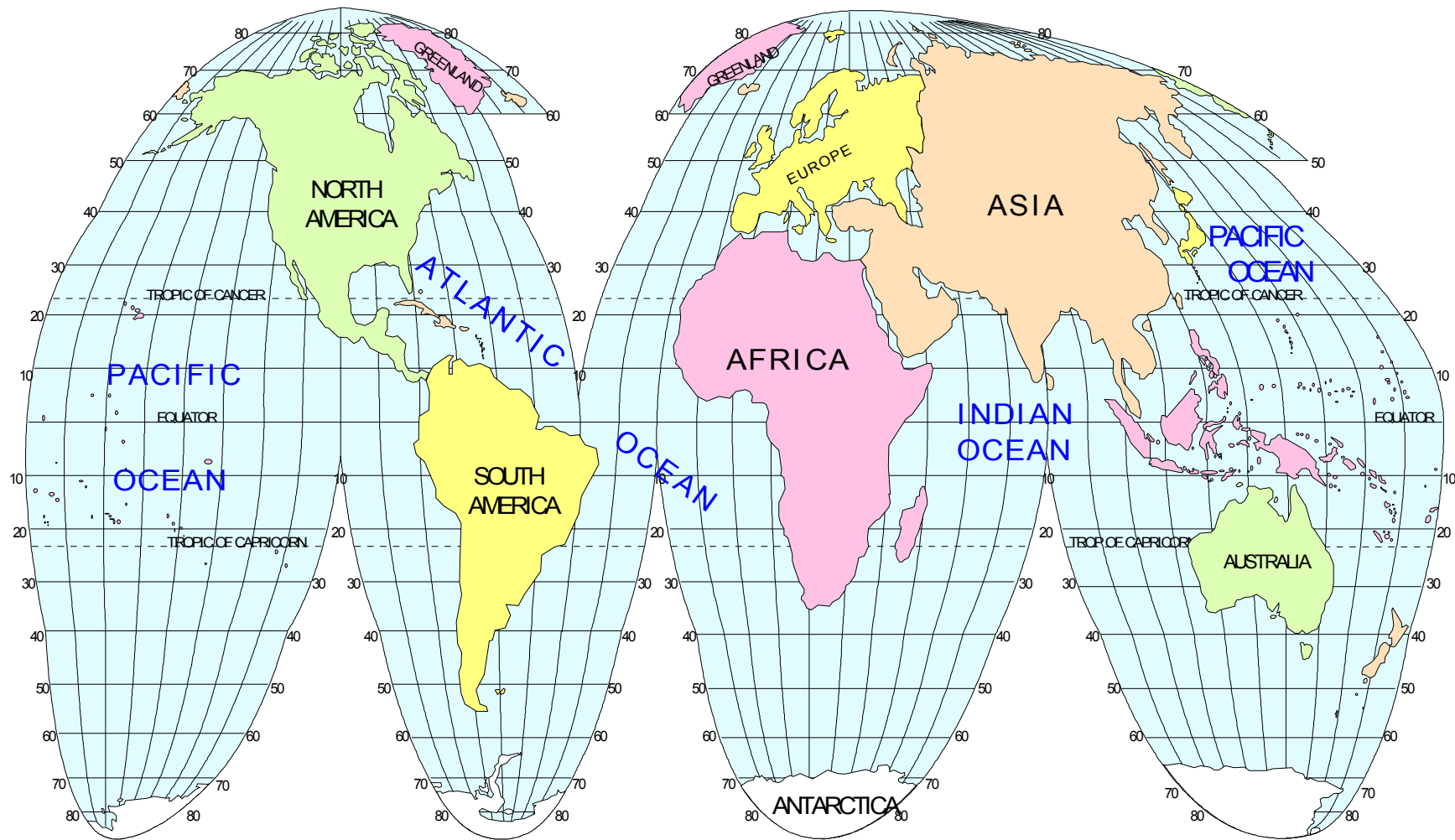
Mercalli Intensity Scale *I - XII*

II = feeble, for sensitive people only

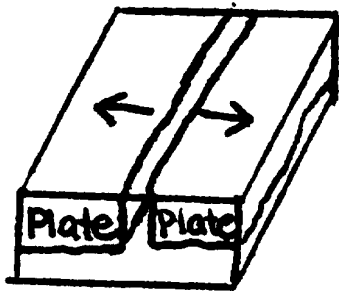
VI = strong, trees sway, objects swing

*X = disastrous, ground cracks badly,
buildings destroyed and railway lines
bent*

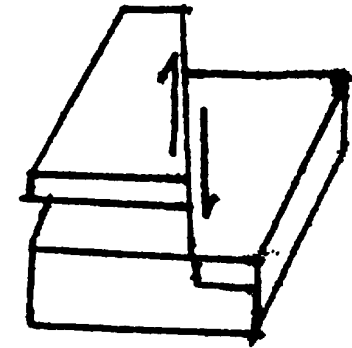
Earthquakes around the world



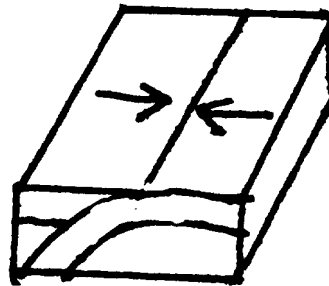
Diverge



Transform



Converge



Types of plate boundary