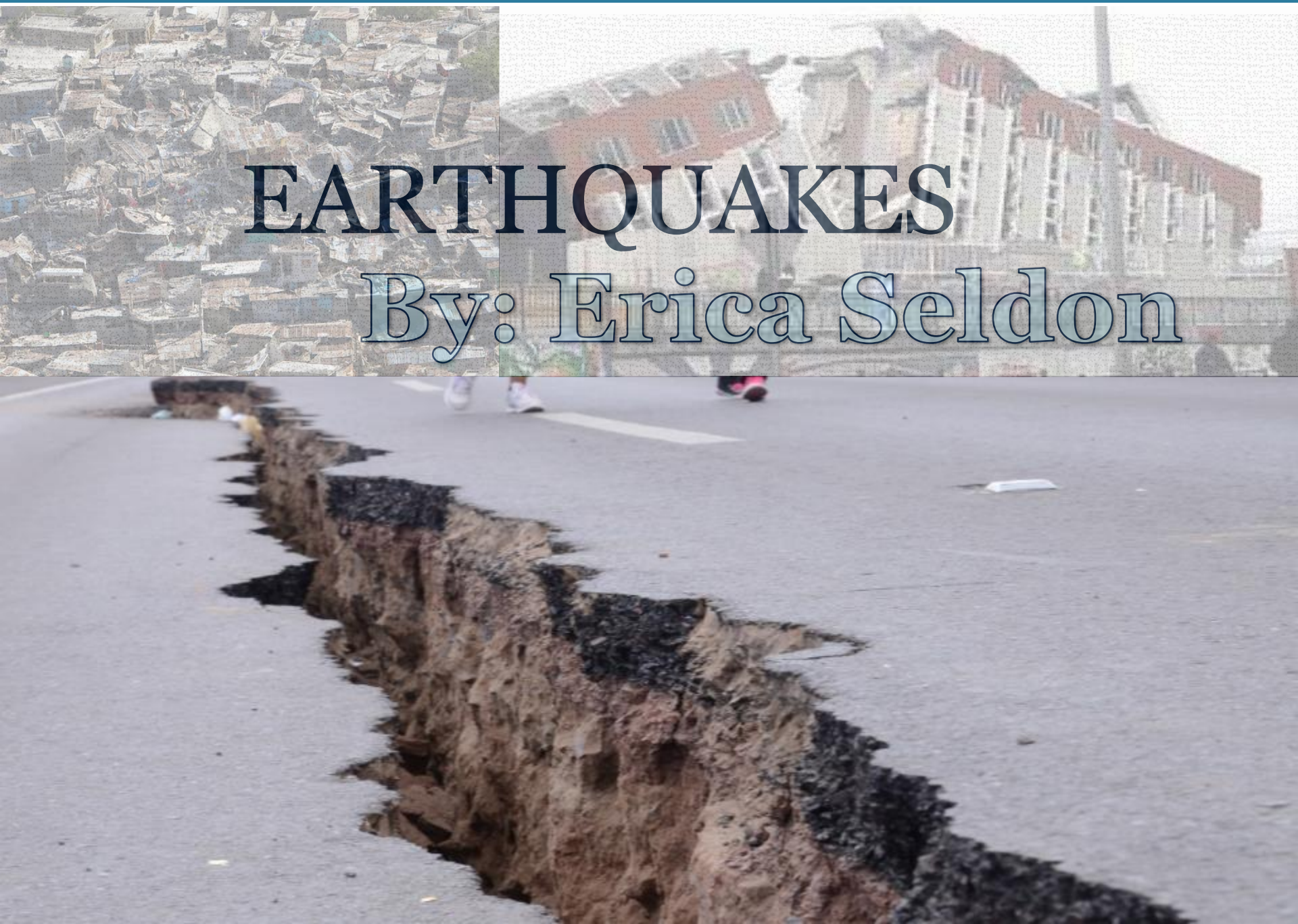
EARTHQUAKES

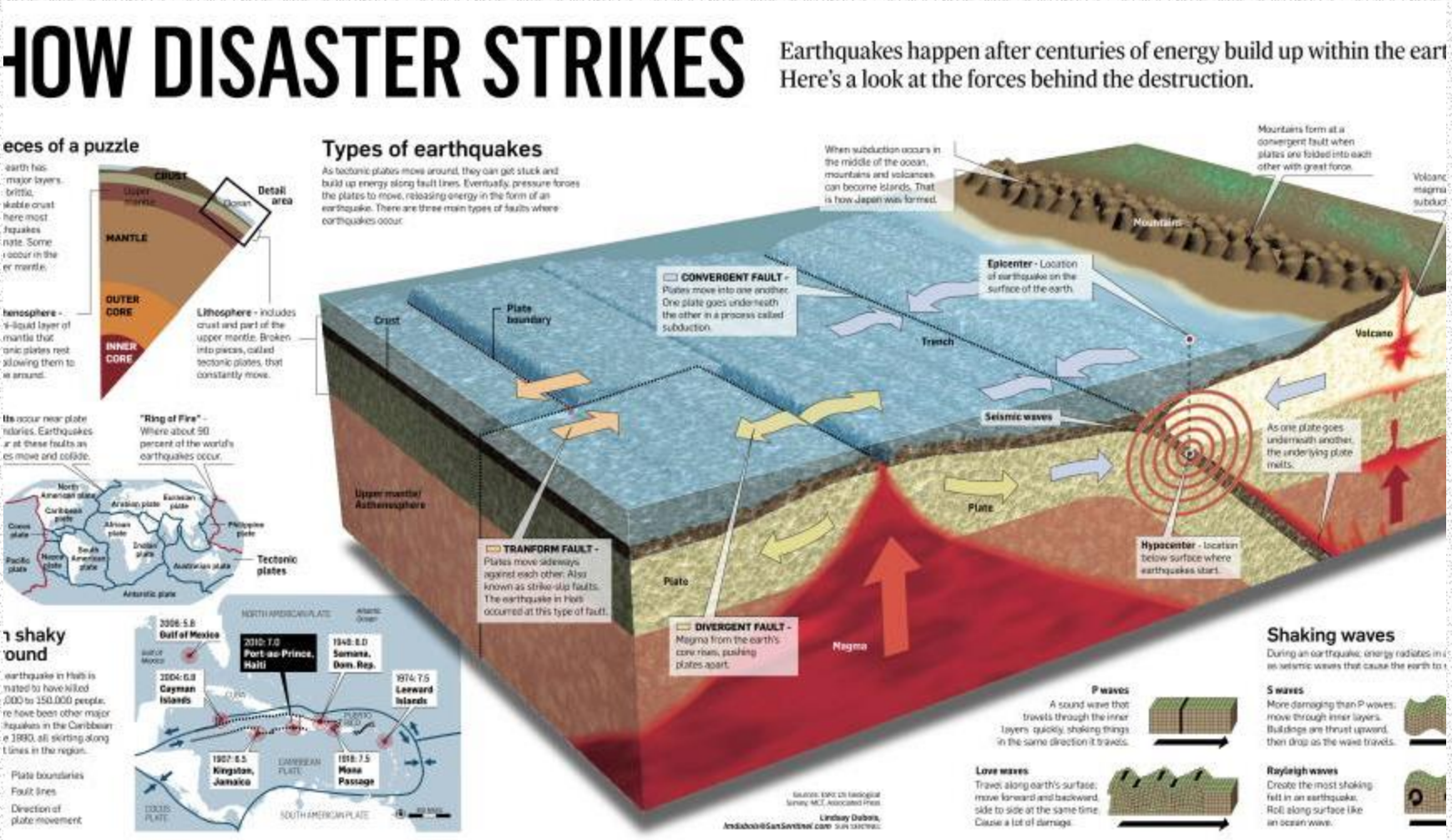
By: Erica Seldon



What causes earthquakes:

- earthquakes are usually caused when rock underground suddenly breaks along a fault. This sudden release of energy causes the seismic waves that make the ground shake. When two blocks of rock or two plates are rubbing against each other, they stick a little.

How a earthquake hits:



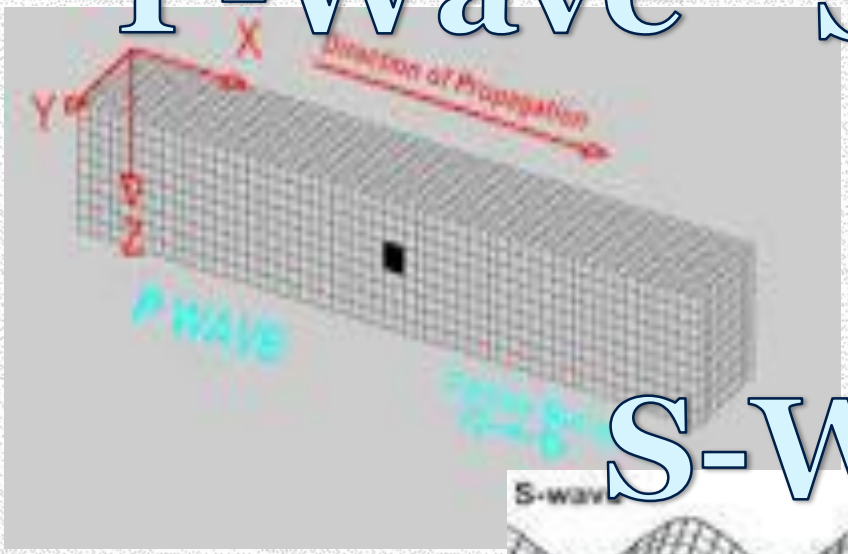
What is a seismic wave?

- A seismic wave is a “mechanical wave” that transfers the energy from the moving crust. The wave always starts at all focus of the earthquakes.
- Seismic waves are the waves of energy caused by the sudden breaking of rock within the earth or an explosion. They are the energy that travels through the earth and is recorded on seismographs.

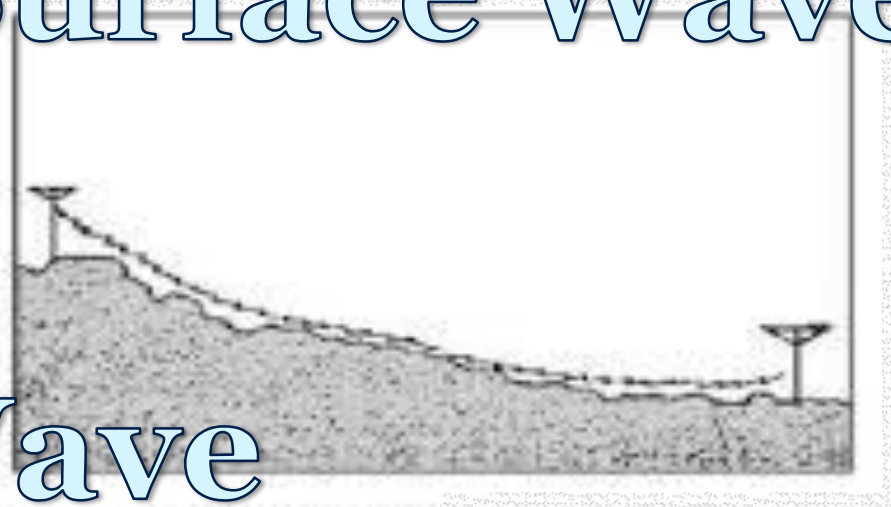
Three types of seismic waves:

- P-wave: the first (primary) wave that is a felt. Its motion is from side to side.
- S-wave: The second (secondary) wave that is felt. Its motion is up and down.
- Surface wave: is felt only when soil and ground have a certain properties.
- Example: Sandy, soils, this causes a "ROLLING" MOTION.

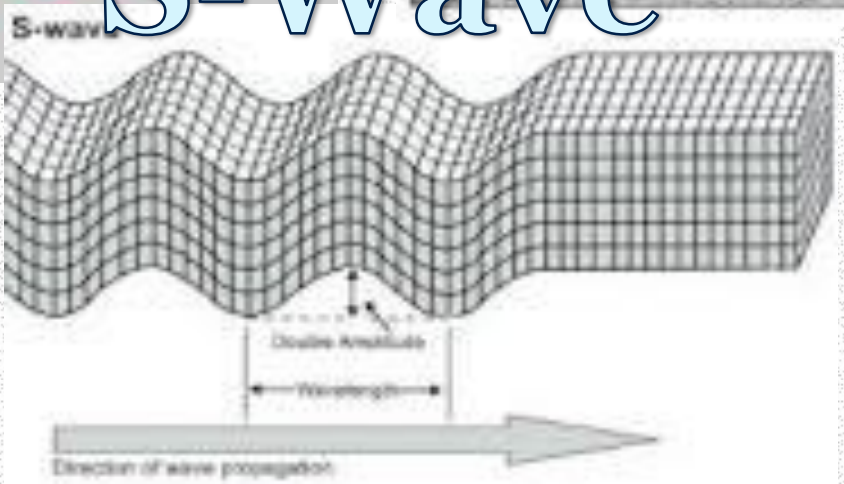
P-Wave



Surface Wave



S-Wave



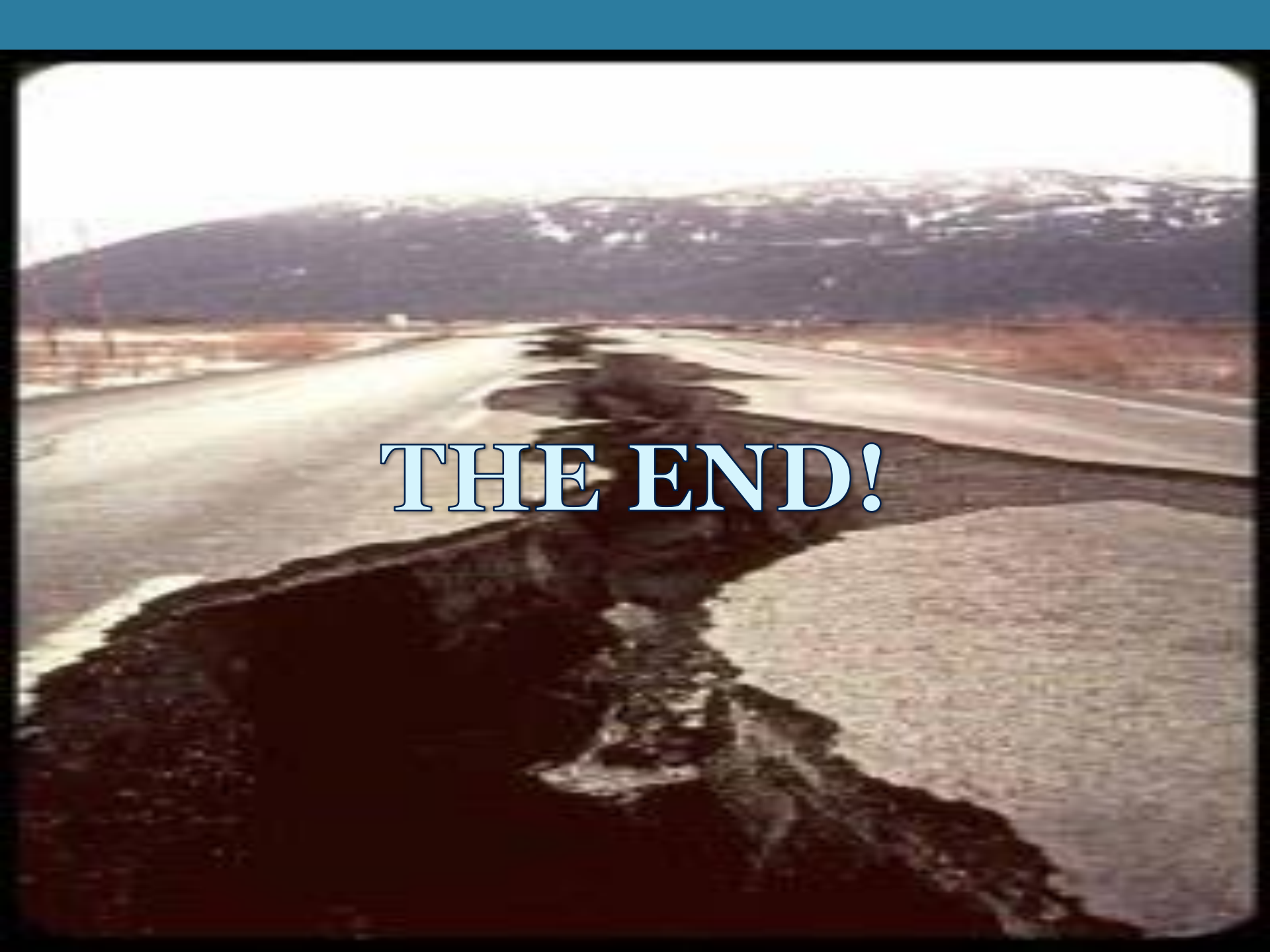
Facts about earthquakes:

- The largest recorded earthquake in the world was a magnitude 9.5 (MN) in Chile on may 22, 1960
- Each year the southern California area has about 10,000 earthquakes. Most of them are so small those keys are not felt.
- Occur when plates move
- Occur at all plate boundaries (convergent, divergent and transform)
- Occur at faults in the middle or within plates.
- Have different intensities- Richter scale.

- The **earliest reported earthquake in California** was felt in 1769 by the exploring expedition of Gaspar de Portola while the group was camping about 48 kilometers (30 miles) southeast of Los Angeles.
- Before electronics allowed recordings of large earthquakes, scientists built large **spring-pendulum seismometers** in an attempt to record the long-period motion produced by such quakes. The largest one weighed about 15 tons. There is a medium-sized one three stories high in Mexico City that is still in operation.
- The **hypocenter** of an earthquake is the location beneath the earth's surface where the rupture of the fault begins. The **epicenter** of an earthquake is the location directly above the hypocenter on the surface of the earth.

Location where they occur:

- P- wave: Earthquakes travel through the earth in all directions from the focus. The ways are moving away from the point where the rocks ruptured cause rock particles to expand contract. This type of earthquake wave causes rocks to compress and expand as the waves move through all parts of the earth.
- S- wave: An s wave is slower than a p wave and can only move through solid rock, not through any liquid medium. It is this property of s waves that led seismologists to conclude that the earth's outer core is a liquid.
- Surface wave: Traveling only through the crust, surface waves are of a lower frequency than body waves, and are easily distinguished on a seismogram as a result. Though they arrive after body waves, it is surface wave that are almost entirely responsible for the damage and destruction associated with earthquakes. This damage and the strength of the surface waves are reduced in deeper earthquakes.


THE END!