

## Why this earthquake is different

Friday's quake has different characteristics from earthquakes on the West Coast. It was caused by a failed rift within the North American tectonic plate. It started to break millions of years ago, but it stopped.

### TECTONIC PLATE

This is one of several large plates deep underneath the earth that move relative to one another. These plates formed hundreds of millions years ago.

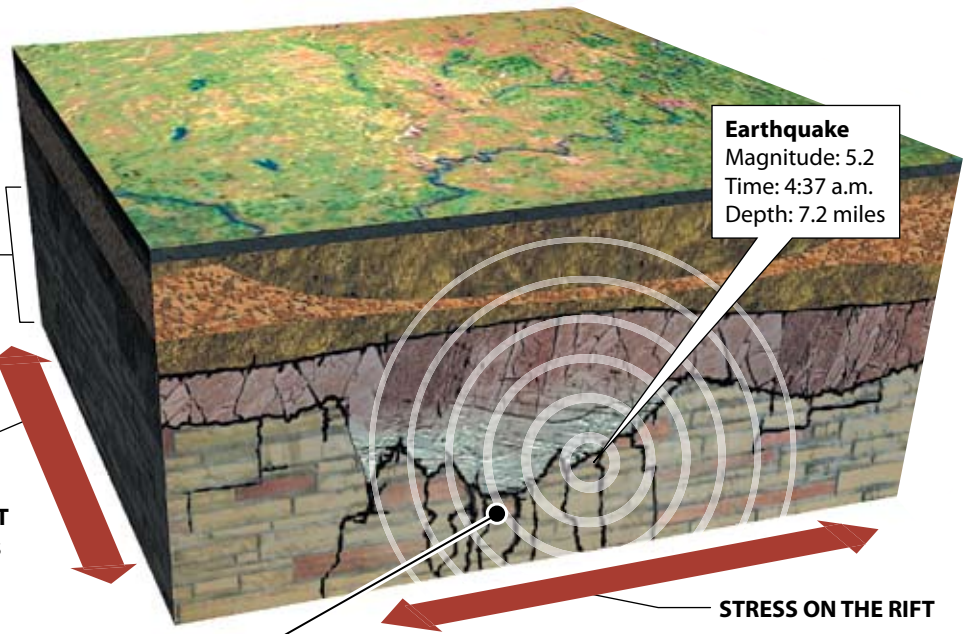
### STRESS ON THE RIFT

The two sides of this failed rift can push or pull slightly, causing an earthquake.

### FAILED RIFT

This type of rift is characterized by vertical fractures within the tectonic plate. It's like an "old wound" that didn't completely break open. Segments of the failed rift continue to move, about an inch a year.

**Earthquake**  
Magnitude: 5.2  
Time: 4:37 a.m.  
Depth: 7.2 miles



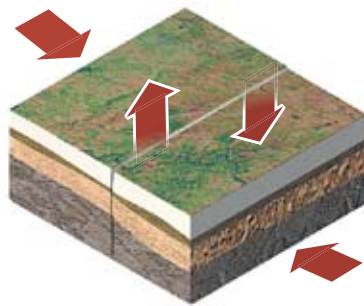
Note: Drawings are schematics

## What didn't happen

These are more common types of faults that cause earthquakes.

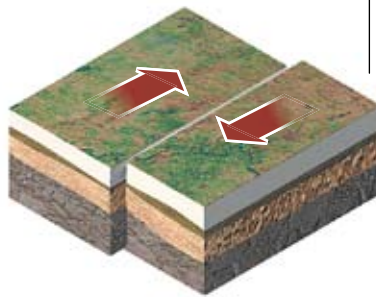
### VERTICAL: DIP-SLIP FAULT

The earth is being pushed together and one side moves up and one side moves down.



### HORIZONTAL: STRIKE-SLIP FAULT

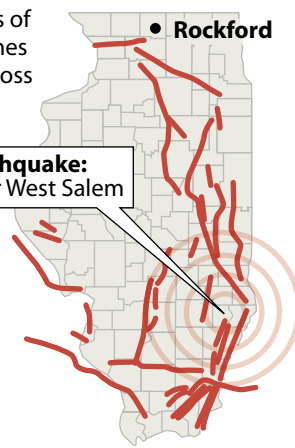
The earth moves as a result of two planes moving side by side in opposite directions.



## Illinois fault lines

Dozens of fault lines criss-cross Illinois.

**Earthquake:**  
Near West Salem

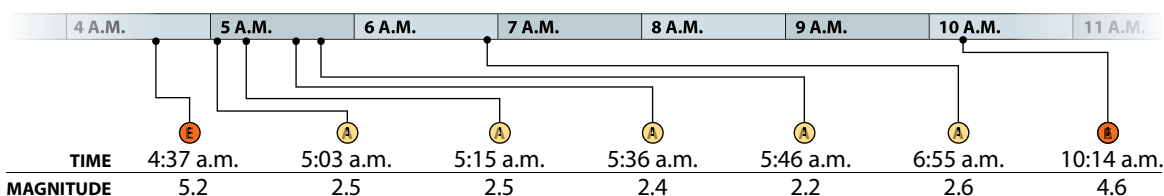


## Measuring Friday's quakes

Earthquakes are measured on a magnitude scale designed to describe ground motion. An increase of one whole number on the scale is a 10-fold increase in strength. Thus, a magnitude 5 quake is 10 times stronger than a magnitude 4.

**E** EARTHQUAKE

**A** AFTERSHOCK



Sources: USGS, Illinois State Geological Survey, Dr. Tom Guensburg, professor of geology at Rock Valley College

MARGO MORGAN, CHRIS SOPRYCH AND KELLEY A. SIMMS | ROCKFORD REGISTER STAR