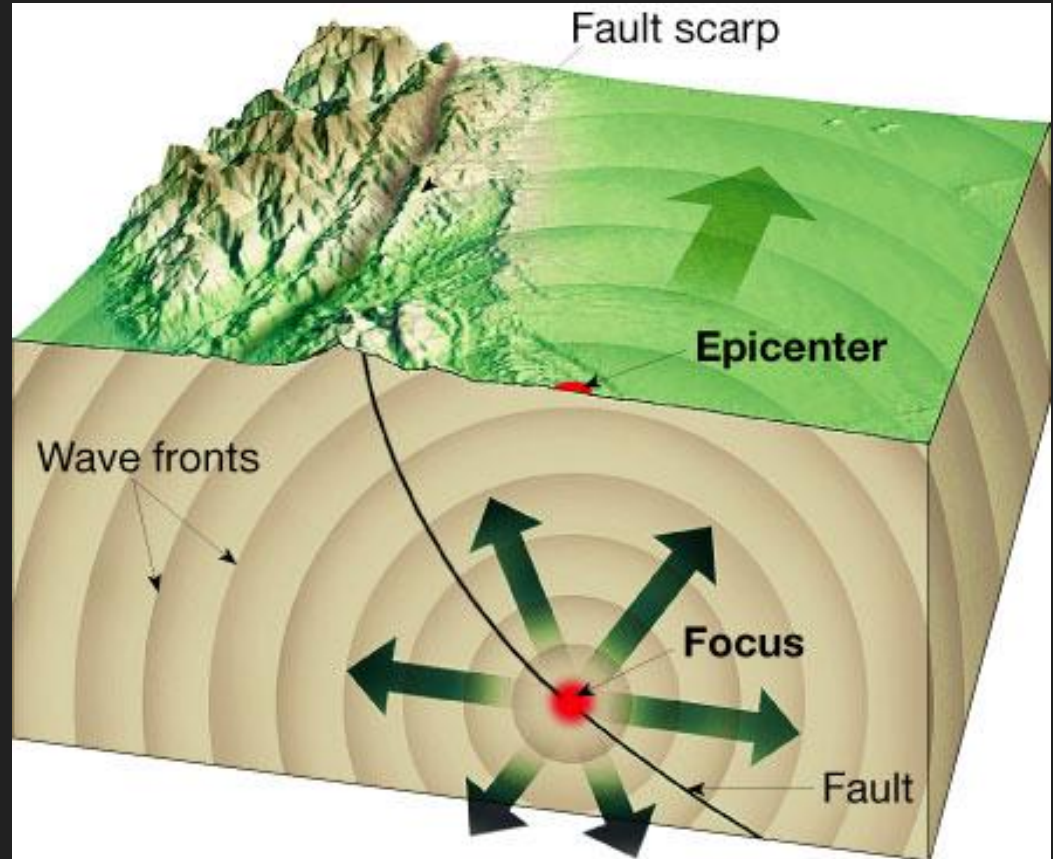


# Understanding Earthquakes

Raspberry Shake Lesson #2

# What happens when an earthquake occurs?

- Energy is released from a focal point
- Quakes occur along faults, or cracks in the earth's crust
- The **focus** is where the earthquake starts
- The **epicenter** is the location directly above the focus

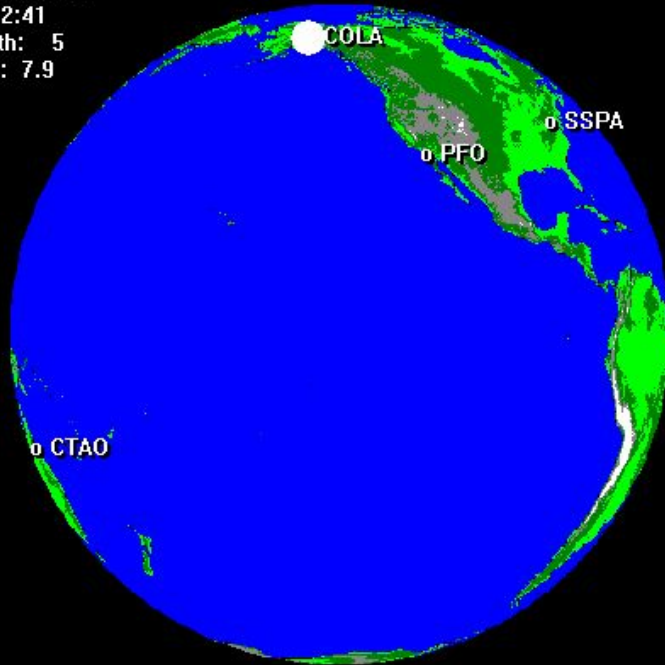


# Where does the Earthquake energy come from?

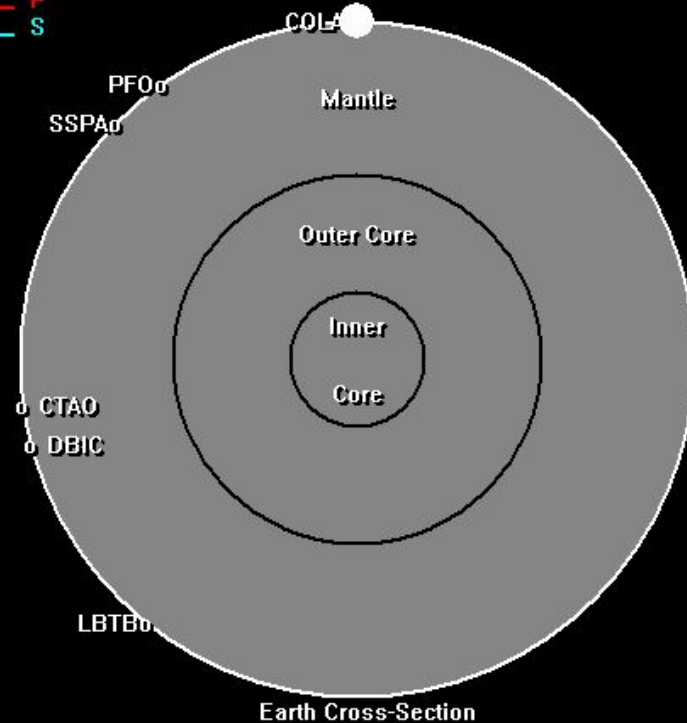
- The earth's crust is always moving
- That movement builds up pressure
- The pressure is built up in areas that have faults
- When the pressure is too much, the rock breaks/slips
- That energy releases as acoustic wave energy!

# How earthquake waves travel

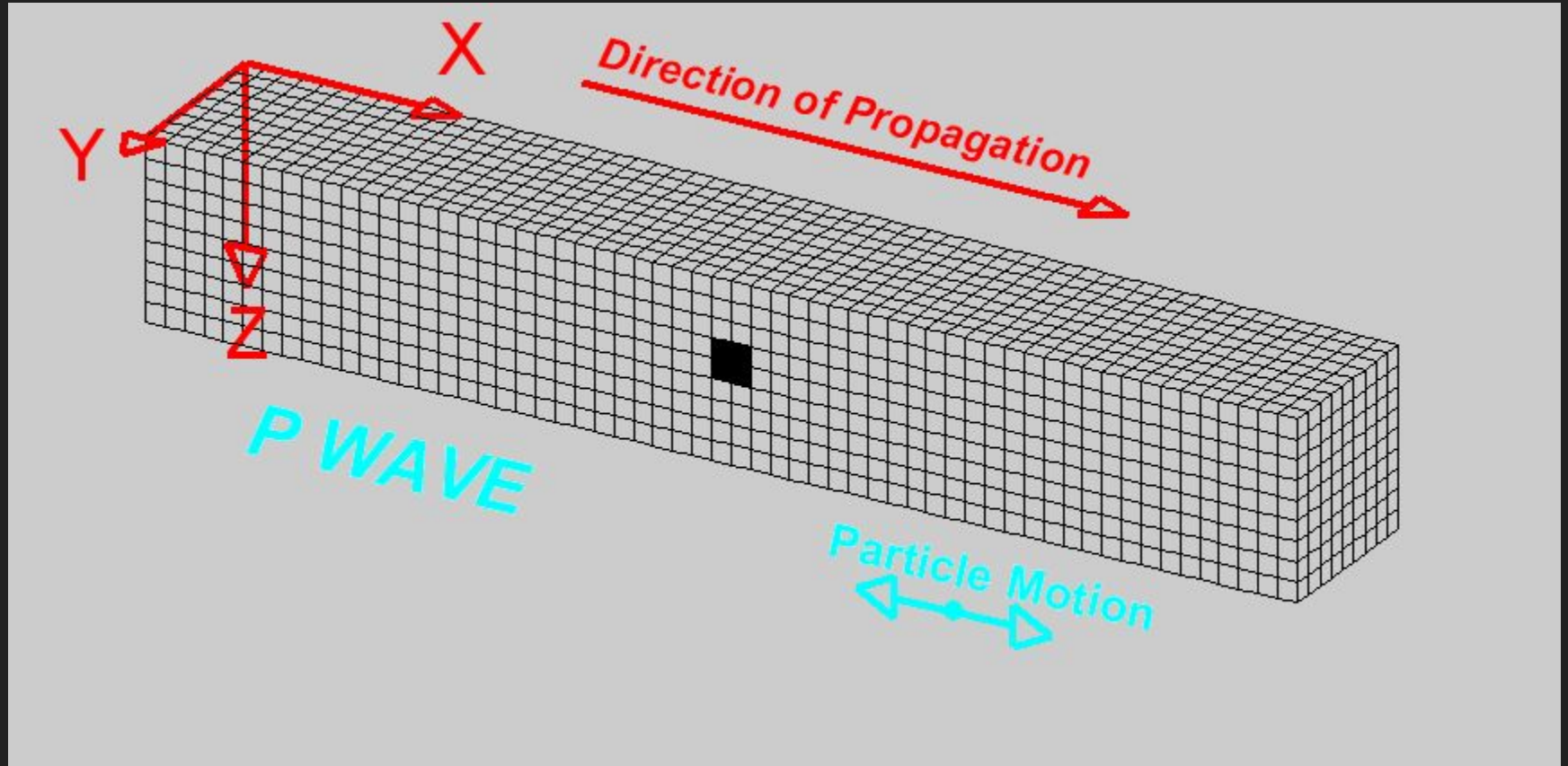
AK: 2002 Denali Earthquake, Alaska  
Nov. 3, 2002  
22:12:41  
Depth: 5  
Mag: 7.9



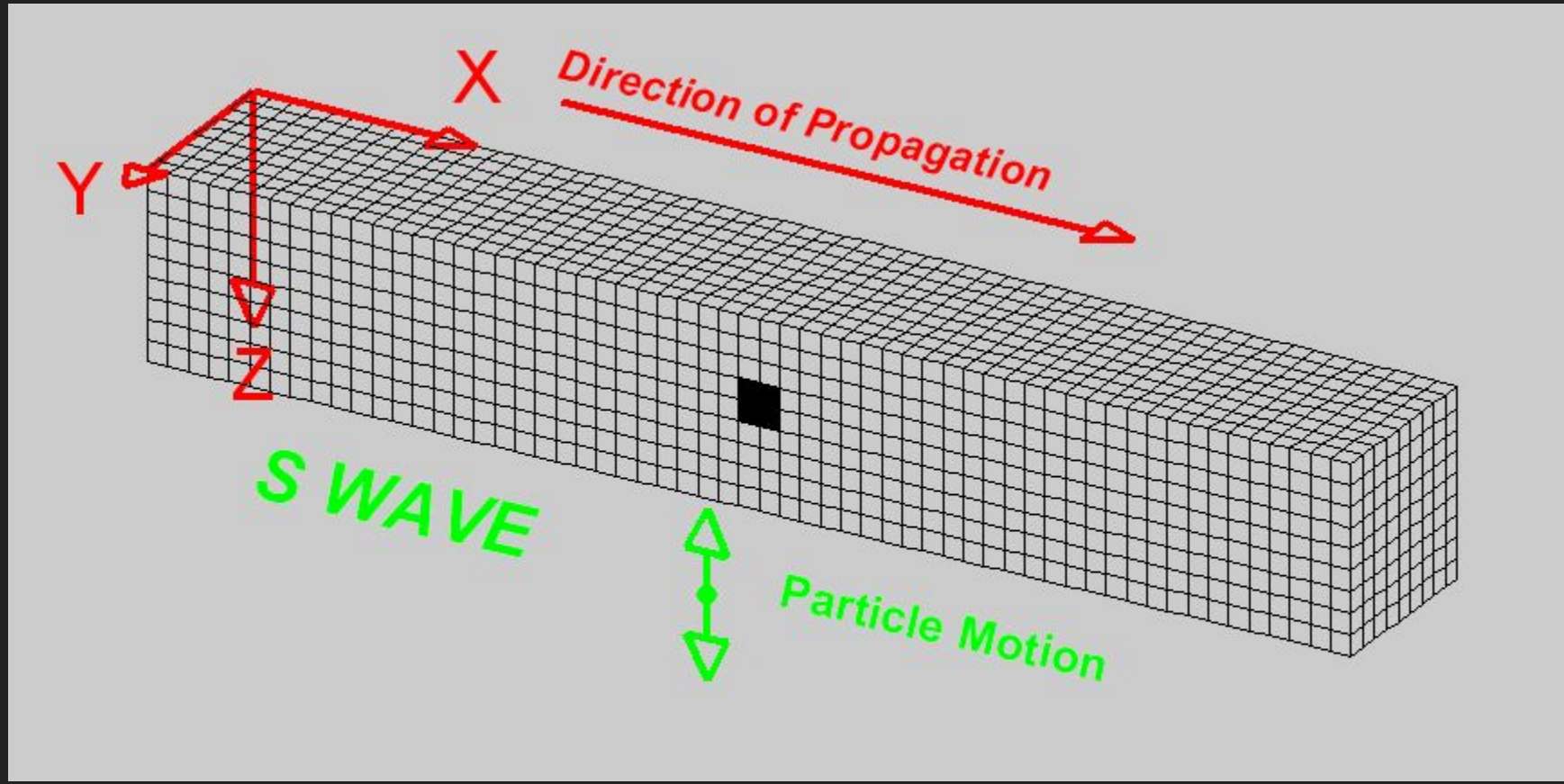
— Surface  
— P  
— S



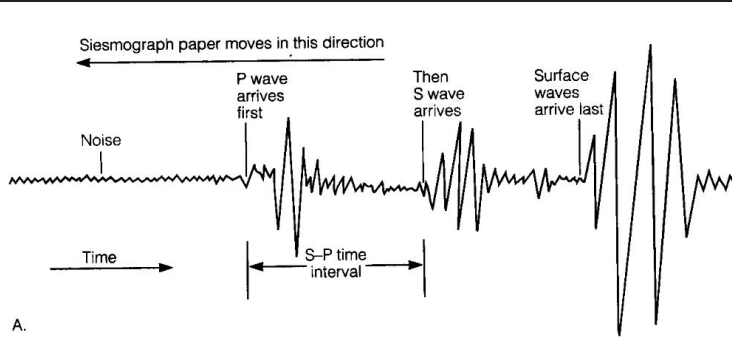
# P - Waves



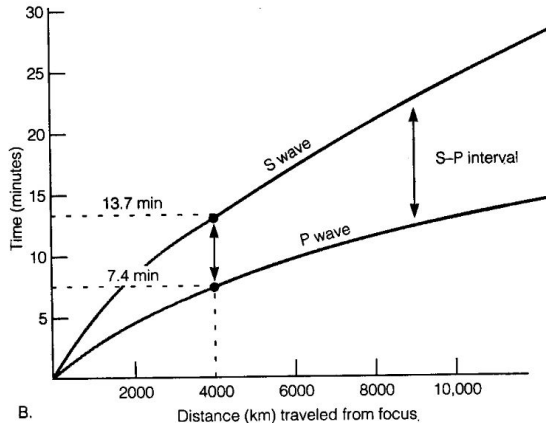
# S - Waves



# Finding the Distance



A.



B.

- P-waves travel much faster than S-waves
- They both start at the same place, at the same time
- The longer the interval between their arrival times, the farther away the starting point

After 1 minute



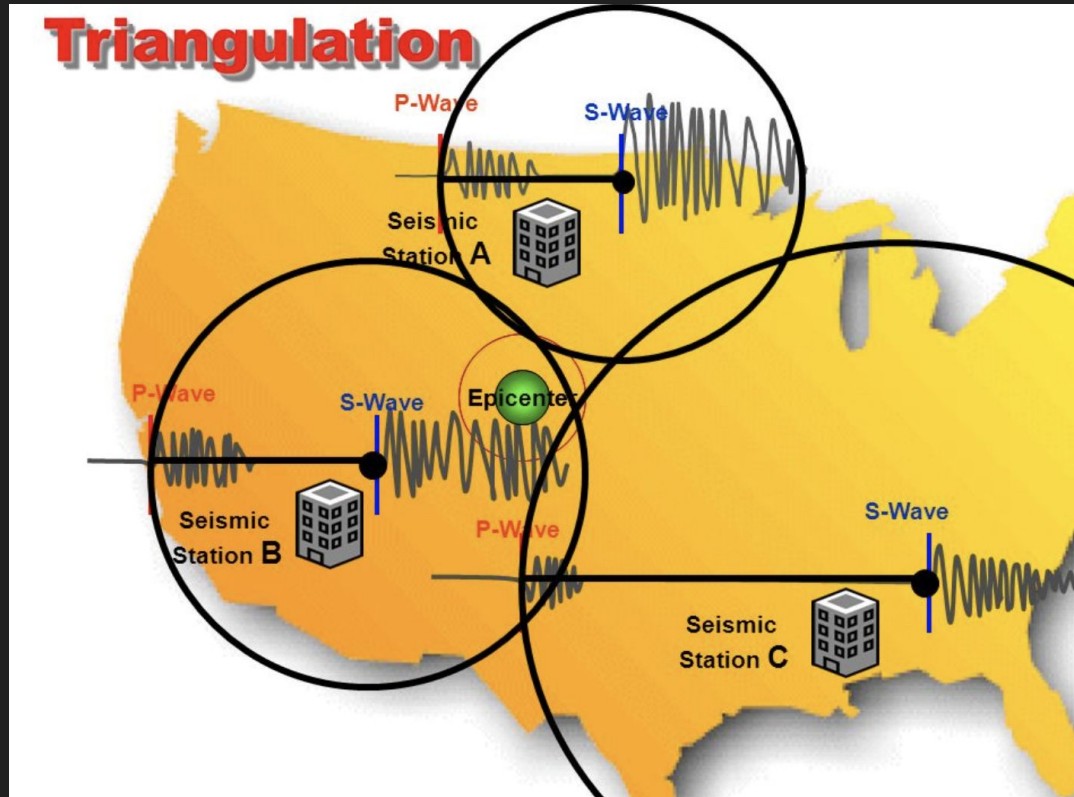
After 5 minutes



After 10 minutes

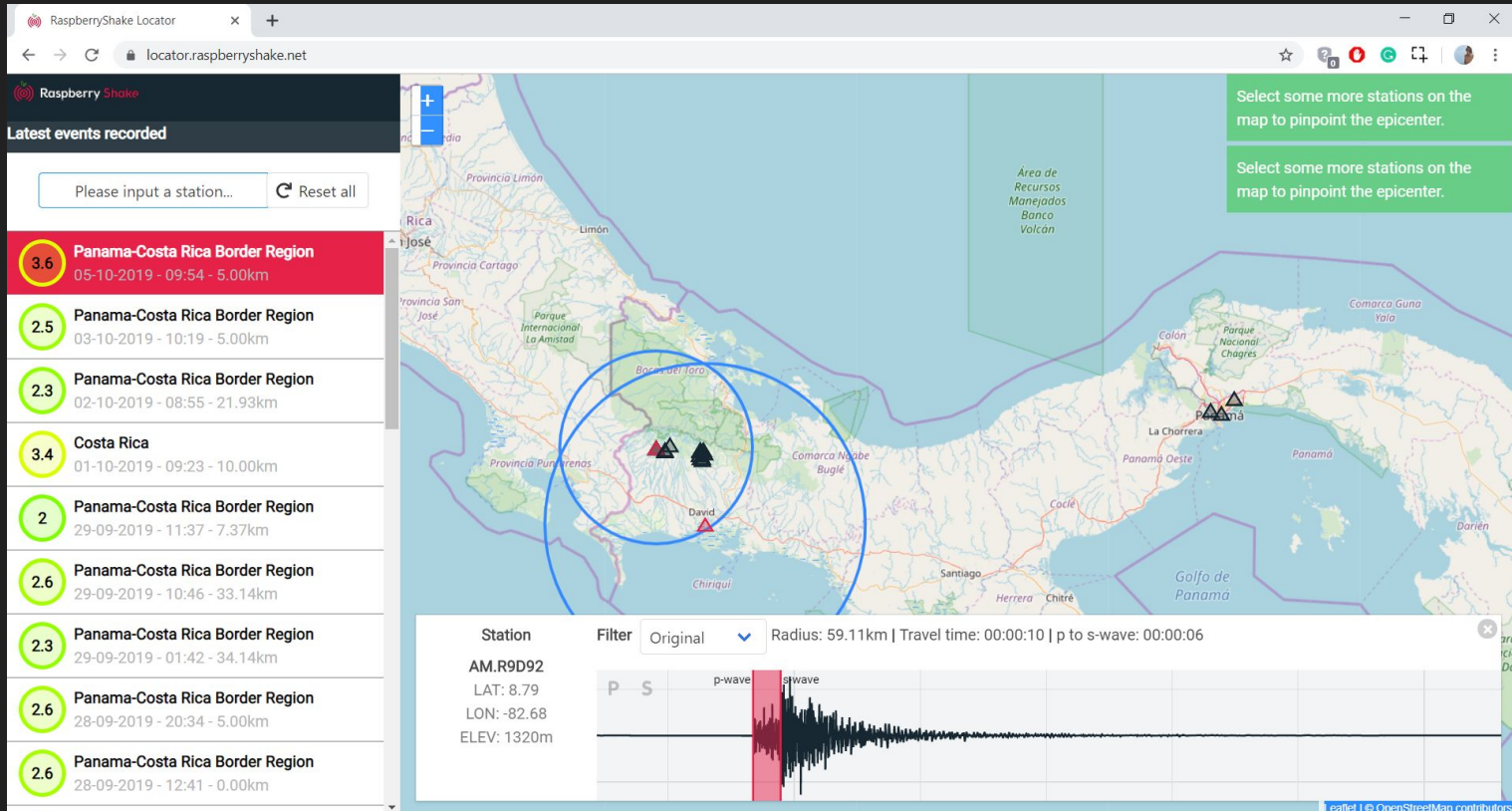


# Locating Earthquakes: Triangulation





# Now let's practice! Go to [locator.raspberrysshake.net](https://locator.raspberrysshake.net)



Raspberry Shake Locator

locator.raspberrysshake.net

Raspberry Shake

Latest events recorded

Please input a station...

- 3.6** Panama-Costa Rica Border Region  
05-10-2019 - 09:54 - 5.00km
- 2.5 Panama-Costa Rica Border Region  
03-10-2019 - 10:19 - 5.00km
- 2.3 Panama-Costa Rica Border Region  
02-10-2019 - 08:55 - 21.93km
- 3.4 Costa Rica  
01-10-2019 - 09:23 - 10.00km
- 2 Panama-Costa Rica Border Region  
29-09-2019 - 11:37 - 7.37km
- 2.6 Panama-Costa Rica Border Region  
29-09-2019 - 10:46 - 33.14km
- 2.3 Panama-Costa Rica Border Region  
29-09-2019 - 01:42 - 34.14km
- 2.6 Panama-Costa Rica Border Region  
28-09-2019 - 20:34 - 5.00km
- 2.6 Panama-Costa Rica Border Region  
28-09-2019 - 12:41 - 0.00km

Station: AM.R9D92  
LAT: 8.79  
LON: -82.68  
ELEV: 1320m

Filter: Original

Radius: 59.11km | Travel time: 00:00:10 | p to s-wave: 00:00:06

p-wave s-wave

leatlet | © OpenStreetMap contributors

Select some more stations on the map to pinpoint the epicenter.

Select some more stations on the map to pinpoint the epicenter.