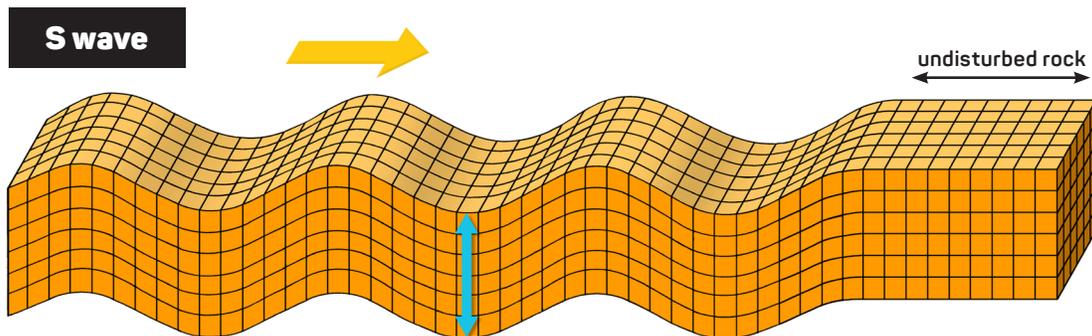
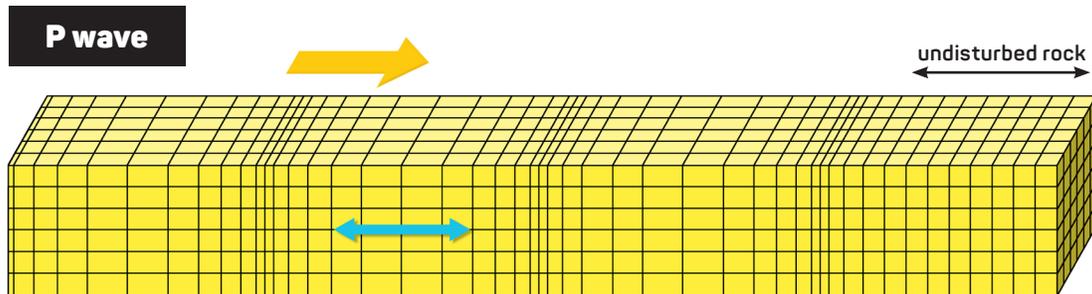


# P-Waves and S-Waves

Moonquakes travel through the ground in two different patterns.



#### LEARN MORE:

[whoi.edu/know-your-ocean/ocean-topics/hazards/earthquakes/earthquakes-and-seismic-waves](https://www.whoi.edu/know-your-ocean/ocean-topics/hazards/earthquakes/earthquakes-and-seismic-waves)

**Moonquakes and earthquakes both release waves of energy—called seismic waves—into the ground.** There are two types of seismic waves: “Primary” (“P”) waves and “Secondary” (“S”) waves. P waves always travel faster, so they arrive at an observer first. These speedy waves are compressional waves, meaning that the ground expands and contracts in the same direction as the forward-traveling wave. S waves, which travel more slowly, are shear waves. That means that the ground moves up and down while the wave moves forward. P and S waves look different on a seismograph (see below), so scientists can use them to better understand when and where a quake occurred, and the make-up of the ground they traveled through.



P waves and S waves being recorded as a moonquake (or earthquake) occurs.