

Name _____

Epicerter Exploration: How Earthquake Epicerteres Are Determined

Short Answer Key

1. P-waves are primary waves that travel fastest and can pass through solids, liquids, and gases. S-waves are secondary waves that travel more slowly and can only pass through solids. They are essential because their arrival times at seismometers help determine the distance from the epicerter.
2. The three-circle method involves using three seismometers at different locations. Each seismometer records the time of arrival of P-waves and S-waves. Circles are drawn on a map around each seismometer with a radius equal to the calculated distance from the seismometer to the epicerter. The point where these three circles intersect is the earthquake's epicerter.
3. The "Ring of Fire" is a hotspot for earthquakes because it encircles the Pacific Ocean and includes many tectonic plate boundaries. The Pacific Tsunami Warning Center plays a vital role by monitoring undersea earthquakes and issuing tsunami warnings to protect coastal communities.
4. The number of seismometers used affects the precision of determining earthquake epicerteres. More seismometers provide data from various locations, improving accuracy by narrowing down the epicerter's location.
5. Answers will vary, but the process would involve collecting arrival time data from multiple seismometers, calculating distances, and using the three-circle method to determine the epicerter's location.

