Interpretation:

1. What is the origin time of the earthquake (at what time did the earthquake occur)? _____

2. Which seismograph recorded the earliest P-wave arrival? The latest? _____ _____

3. What does the difference described in #2 suggest about the relative locations of each seismograph?

_____

_____

4. Where was the epicenter (which State and/or Country?) of this earthquake located? _____

5. Use your **Plate Tectonics** map to determine what *type* of plate boundary is located here. _____

6. **Which** plates are found along this boundary? _____

7. Describe what might be happening here to *cause* earthquakes at this location. BE SPECIFIC! _____

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_____

8. Your circles may not have intersected precisely at one point. Other than error in your measurements, what are the possible reasons for this? (be specific!)

_____

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You have been using the P- and S-wave travel time curve to determine the distance to epicenter. We have asked you to use this curve for *every* earthquake you study. Explain why this curve might not be appropriate in all situations, and justify your answer.

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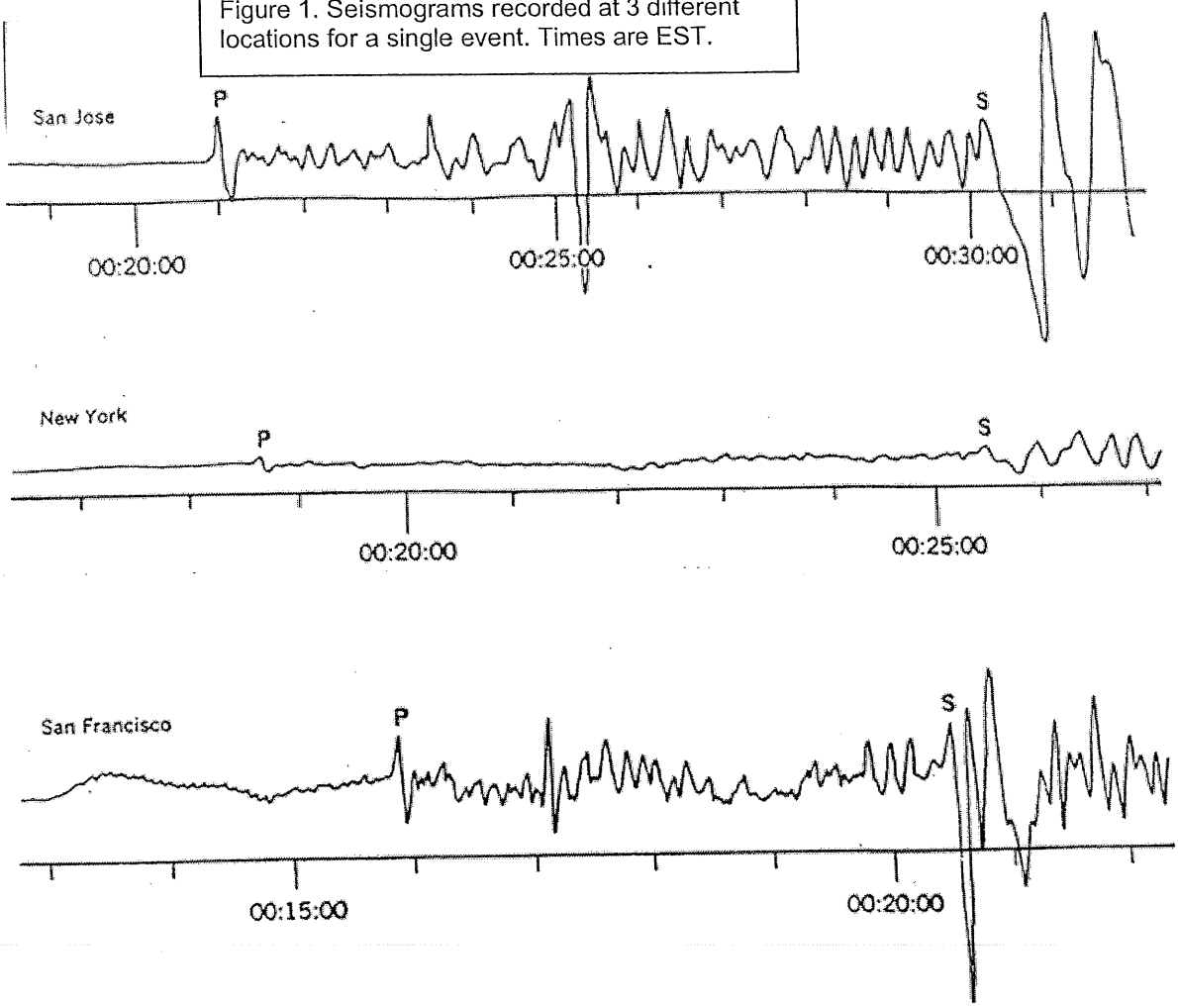
Figure 1. Seismograms recorded at 3 different locations for a single event. Times are EST.



3. Now use the ***S*** minus ***P*** times and the ***P*- and *S*-*wave* Travel Time Curve** (Page 11 ESRT's) to estimate the distance from the epicenter for each location. Refer to the following procedure to accomplish this:

- Lay a strip of blank paper along the time axis of the Travel Time Curve (Page 11 ESRT's). Mark two dots on the edge of the paper corresponding to the **S-P** time difference calculated for the first location above.
- Keeping the edge of the paper parallel to the vertical lines on the graph, slide the paper along the **S** and **P** curves until the two dots lie exactly on the **S** and **P** curves.
- A vertical line through the **S** and **P** curves at these points should intersect the horizontal axis. This is the distance between the seismograph at this location and the earthquake's epicenter.
- Record this distance in the table below. Repeat this procedure for the next two **S-P** times.

SEISMOGRAPH LOCATION	DISTANCE to EPICENTER
San Jose, Costa Rica	**kilometers**
New York, NY	**kilometers**
San Francisco, CA	**kilometers**