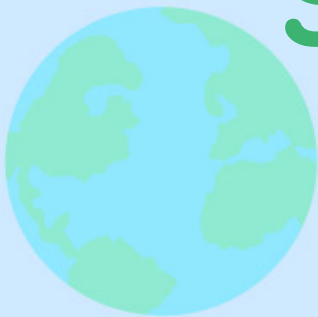


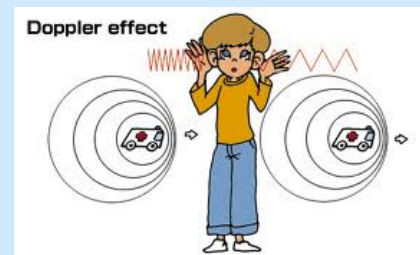
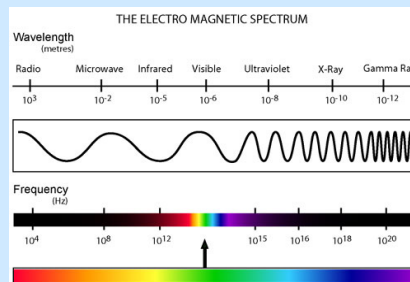
The Awesome Andromeda's

Amanda Napieralski & Laura Arnold

The Stupendous Seismogram Study



How do you chose to teach about only one of the awesome connections between Earth Science and Physics?



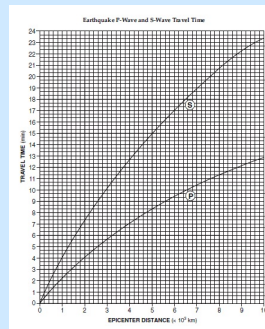
Well, we *love* waves and the
shaking Earth.....

EARTHQUAKES!



Objectives of Seismogram Activity

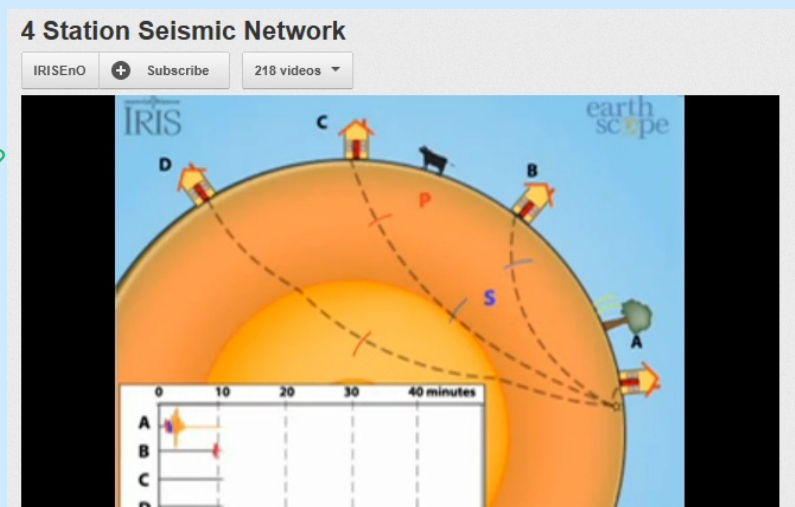
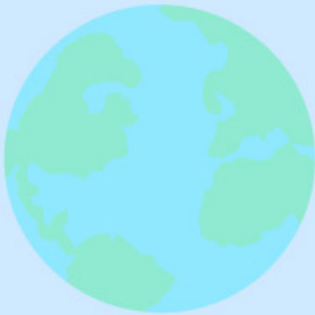
- Students will measure distance and arrival time for p- and s-waves so that they can graph it and interpret the graph.
- Students will graph distance and arrival time for p- and s-waves so that they can use and interpret the “Earthquake P and S wave Travel Time” graph in the ESRT.



Reel 'em in!

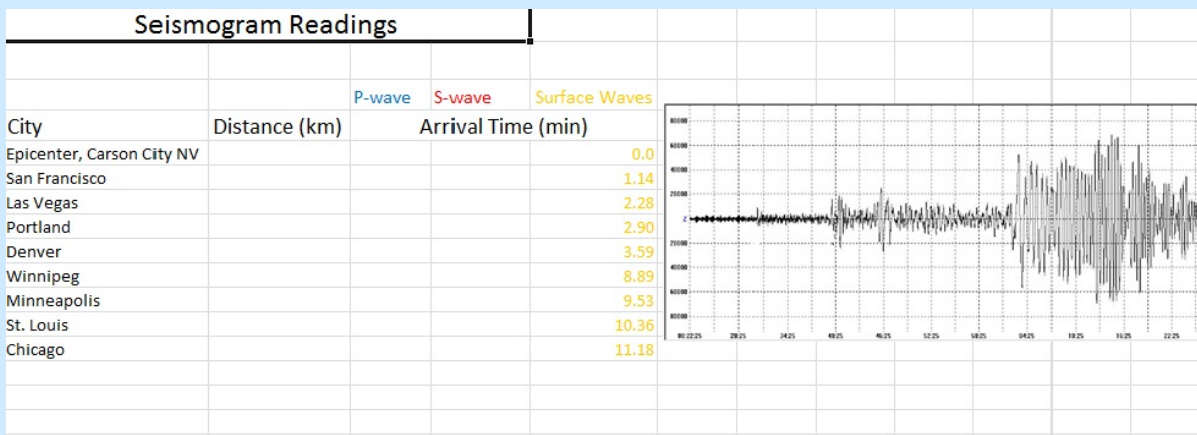
- Using models to represent and simplify important variables

- What do we observe?
- What can we measure?
- What relationships can we study?

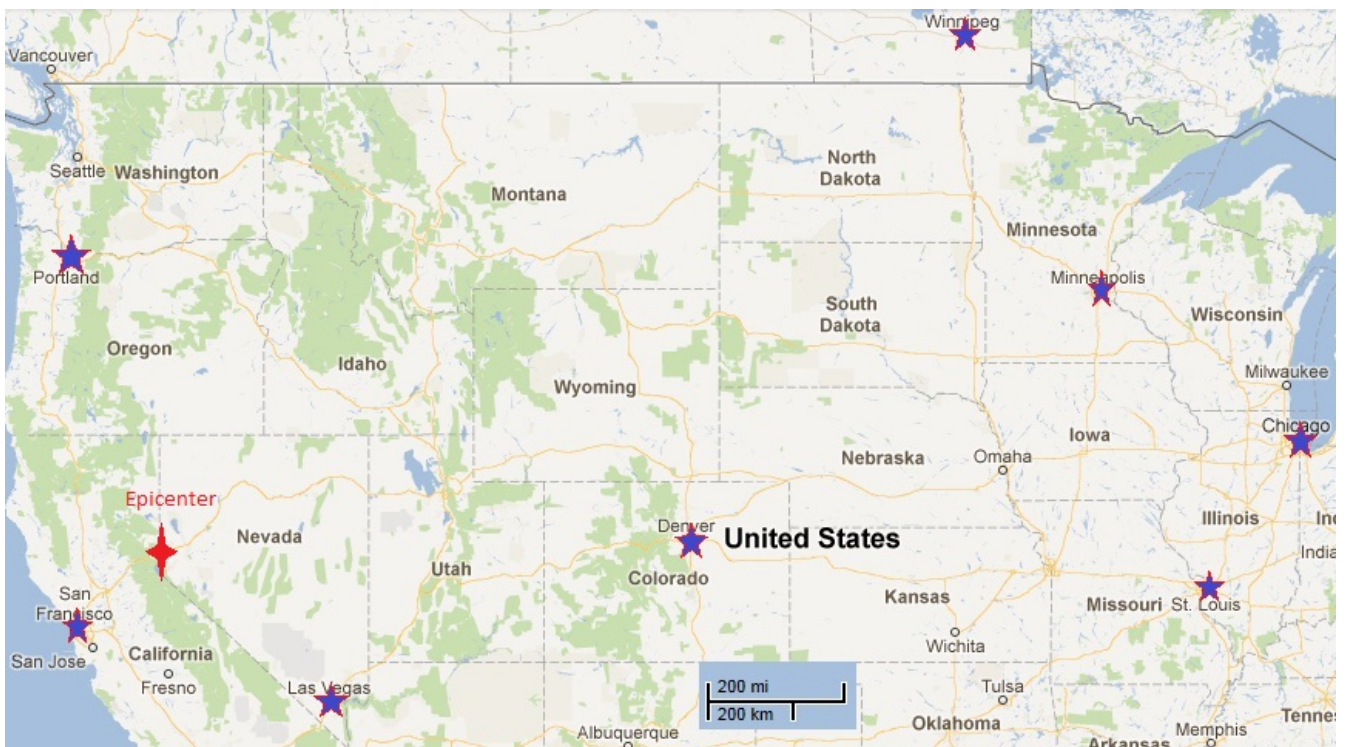


Student Procedure

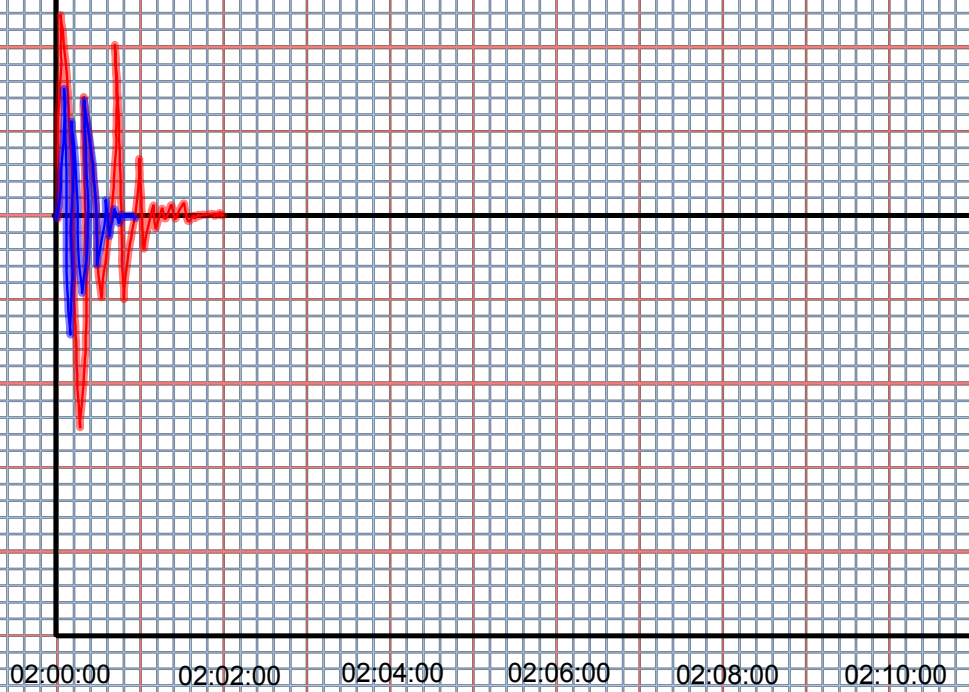
- Measure distance
- Measure arrival times
- Make a graph



Earthquake Map



Carson City, NV

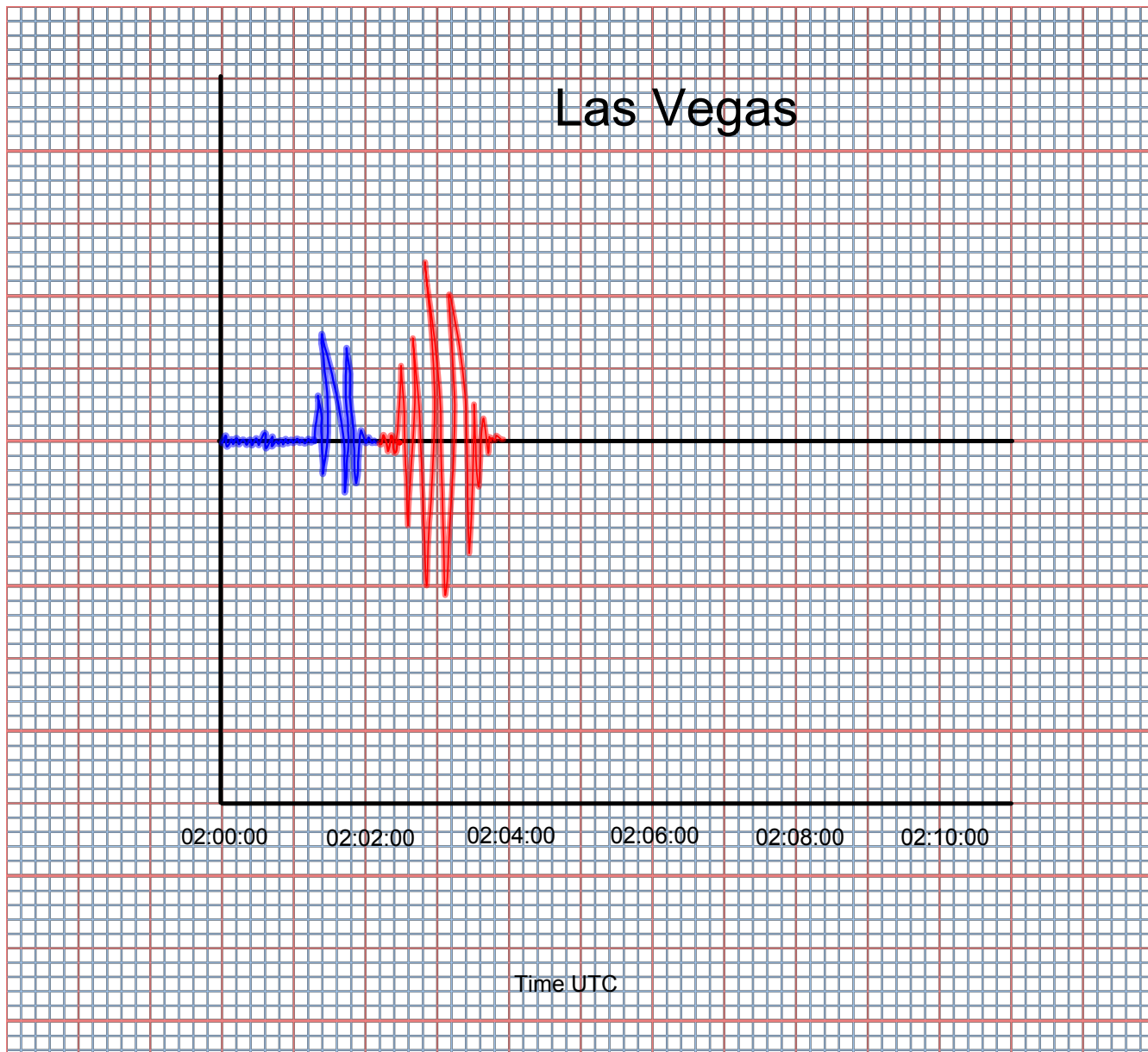


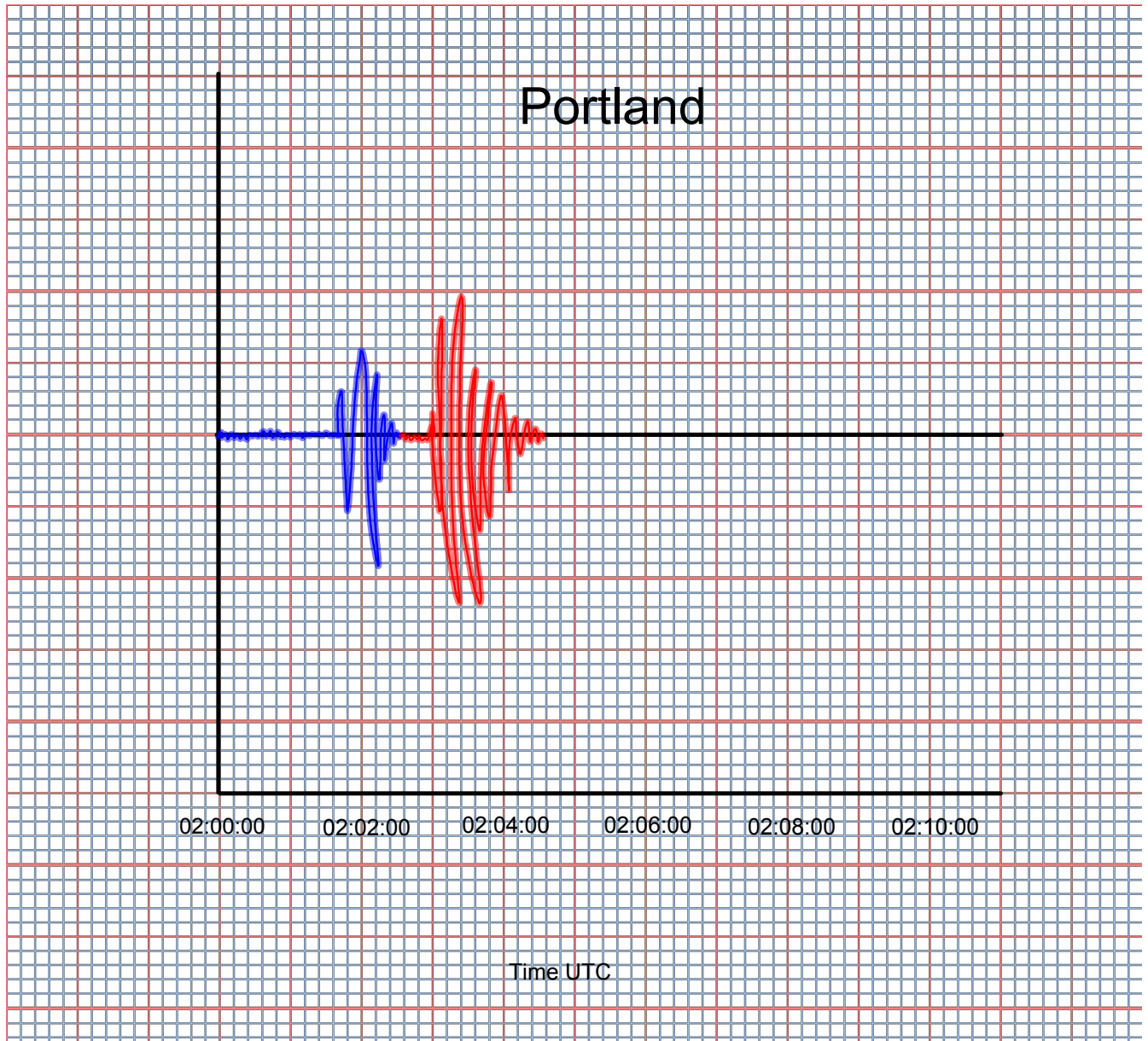
Time UTC

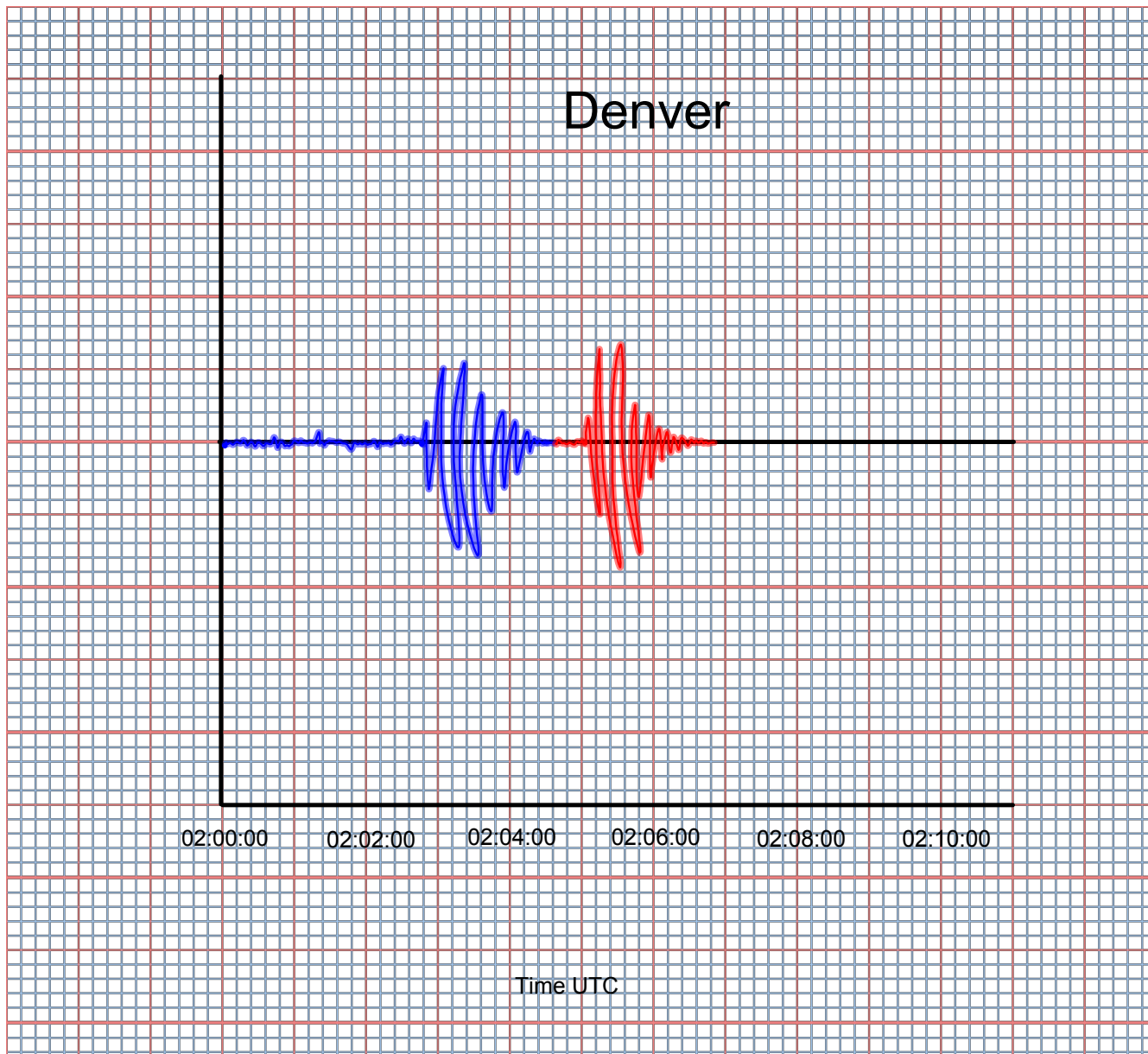
San Francisco

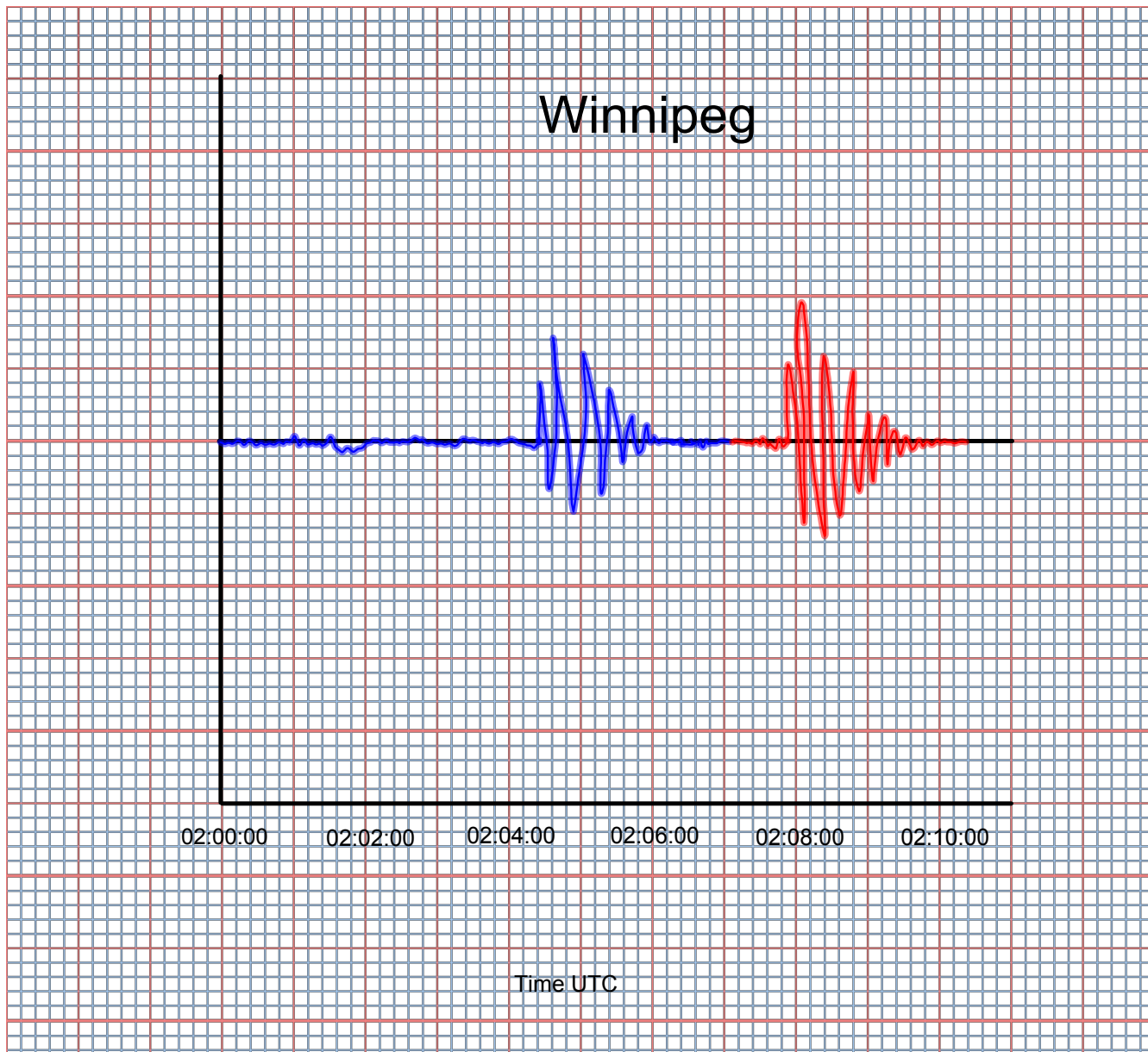
02:00:00 02:02:00 02:04:00 02:06:00 02:08:00 02:10:00

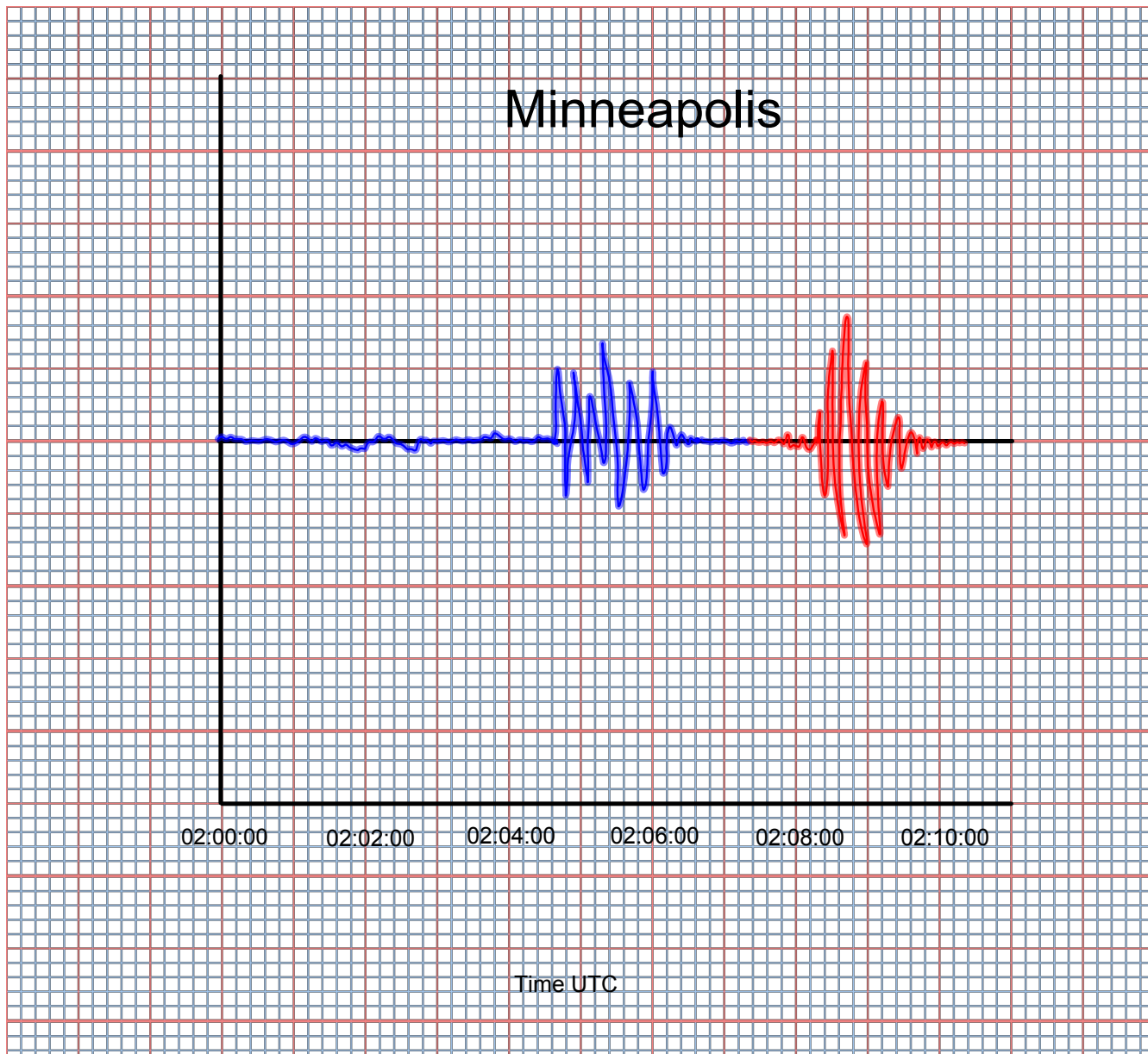
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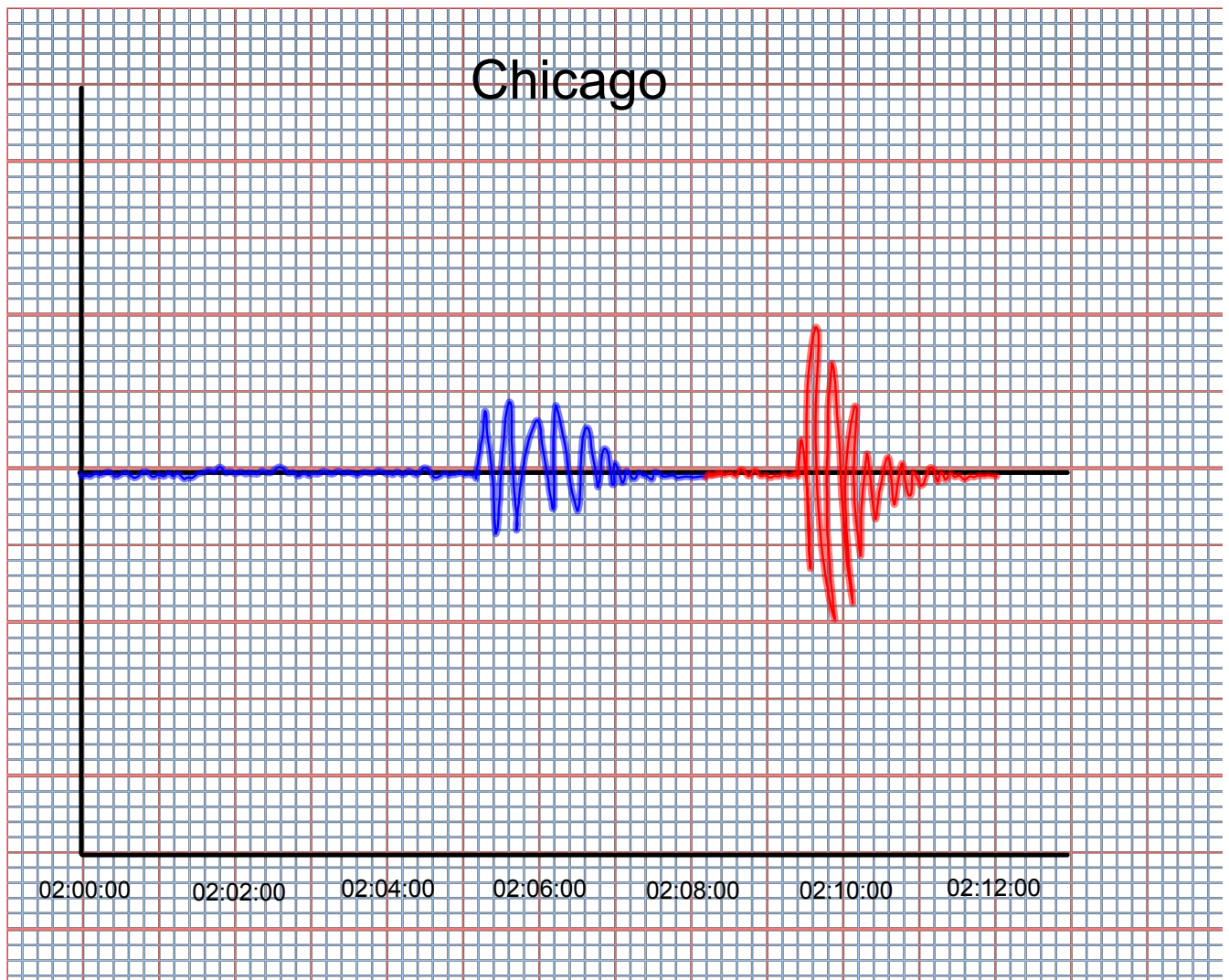




St. Louis

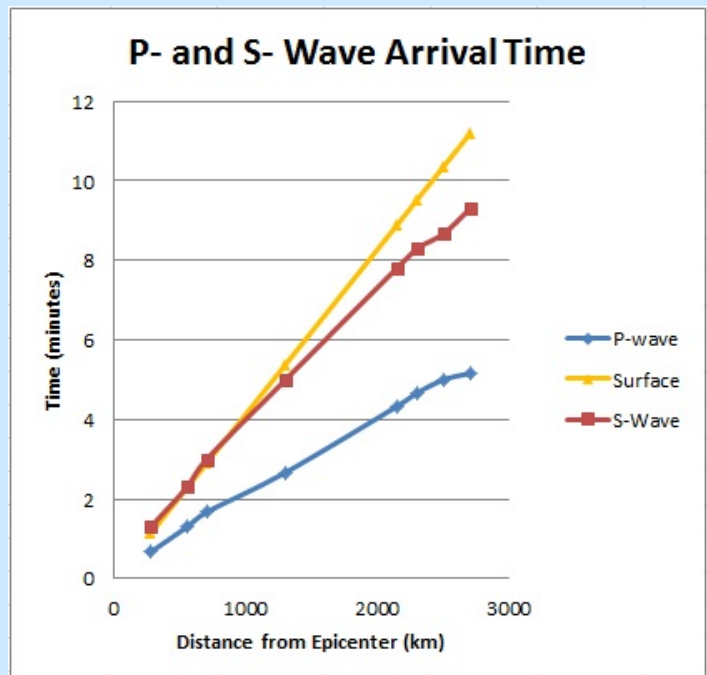
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Time UTC

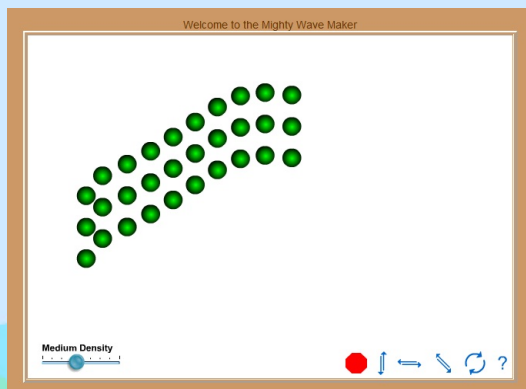


Question Time

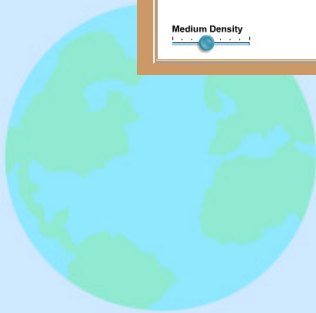
- What relationships do you see?
- How do the relationships compare?



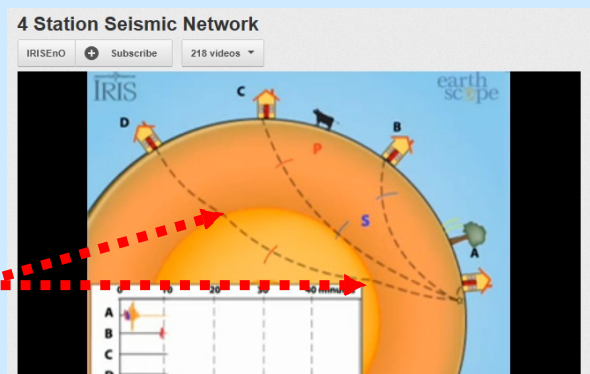
Making the Connections



- Density
- Velocity



- Refraction



Questions, Comments, Concerns, Complaints?

Noyce Summer Institute Program 2012



Thank you to the CMST Institute Instructors