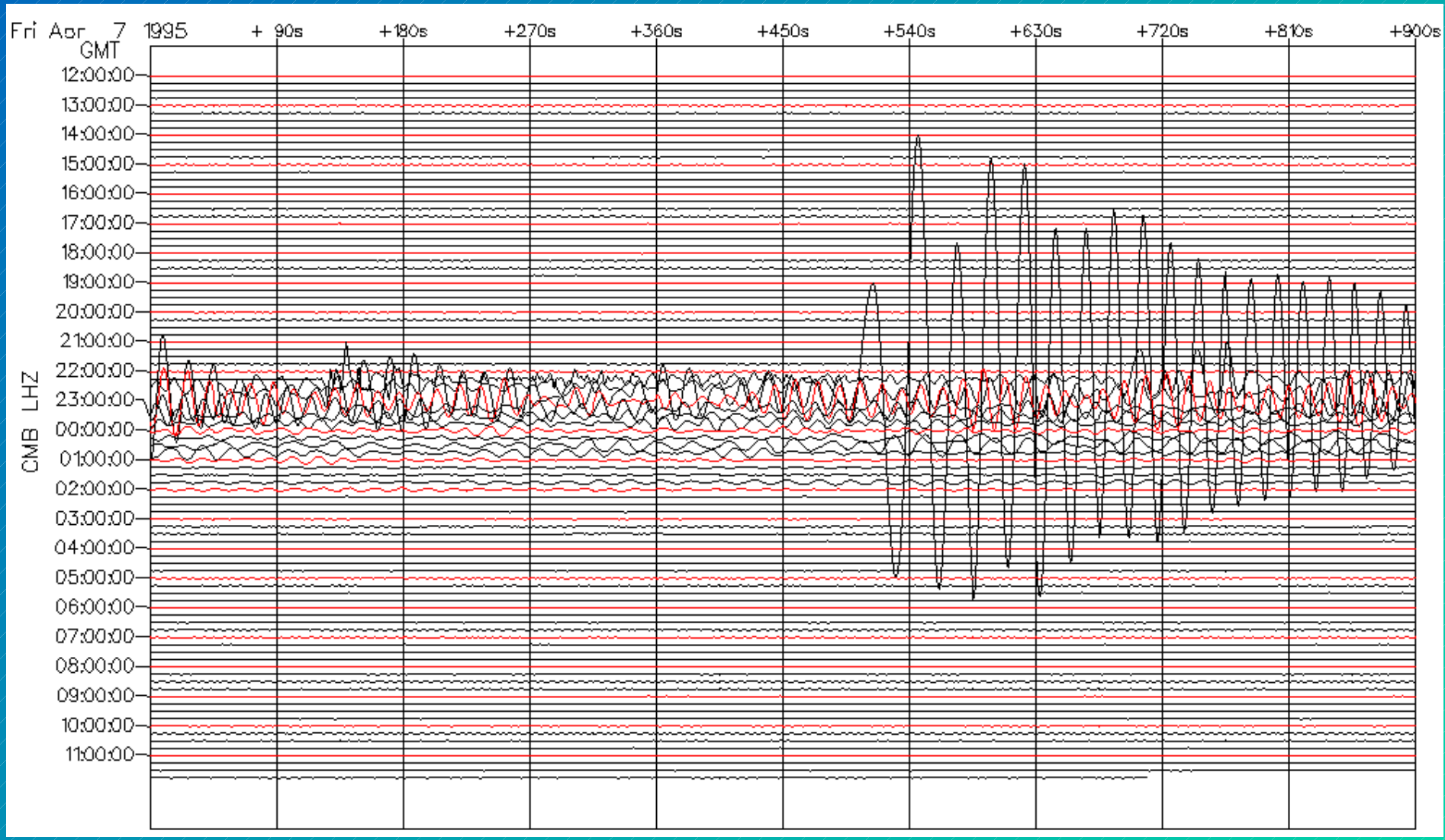
This is what seismology looks like!



Disciplinary group discussions: Seismology

Method	Wavespeed Variation	Lateral Resolution	Depth Resolution	other
Regional surface wave tomography	2%	50-100 km	50-200 km	Absolute velocities
Global surface wave tomography	2%	500 km	400-600 km	Global coverage
Regional shear wave tomography	2%	300 km	D’’(500 km up from CMB)	
Regional body wave tomography	2%	20-40 km	200-400 km	
Global body wave tomography	1%	1000 km	700-CMB	100 km depth resolution
Body wave boundary reflections	1.5 - 2%	300 km 100 km	CMB	
scattering	3%	50-100 km	CMB	
Receiver functions		10-100 km	30-1000 km	
Body wave precursors	2%	1000 km	410, 520, 660	
Normal modes	1%	5000 km	Entire earth	Lose sensitivity at boundaries
Shear wave splitting	2%	50-100 km	Difficult to determine	

We Can…..

- Test specific models.
- Use P and S to get at Temp. vs Composition.
- Throw all the different data together.
- We can detect structures with 2% velocity variation to scales of 100 km. Plum pudding or marble cake, delicious problem.
- Statistical seismology to investigate heterogeneity.
- Constrain depths of anisotropy.

What do you have that I want?

- What should a descending slab look like?
- What are the mechanisms that can give us anisotropy at different layers in the mantle?
- Can ridges and TZ processes be related?
- Why do earthquakes stop at 700 km?
- Give us a map of elastic constants throughout the earth for realistic compositions, we'll verify.