

Problem Set #1 - Cascadia Subduction Zone

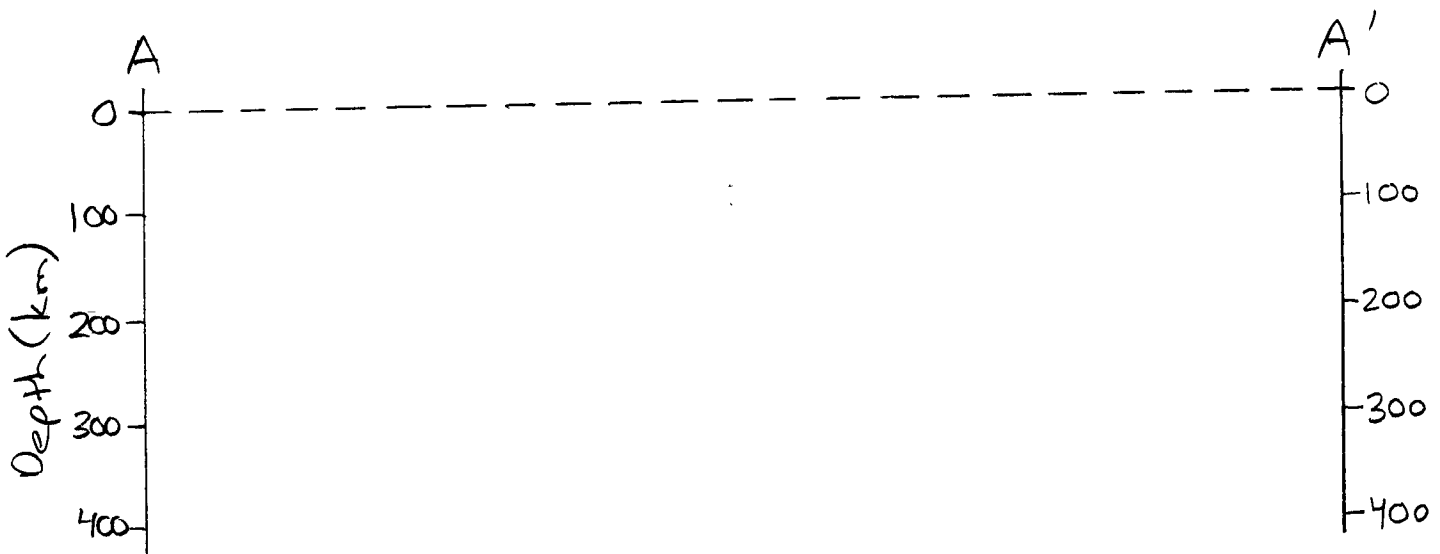
Due Thursday, August 28

The goal of this exercise is to construct a geologic/tectonic cross section through the Juan de Fuca Ridge and the Cascadia subduction zone. On the accompanying tectonic map, I have depicted the major plate boundaries in the Cascadia region, as well as the location of the accretionary prism, arc volcanoes, and the depth to the Wadati-Benioff zone (dashed line).

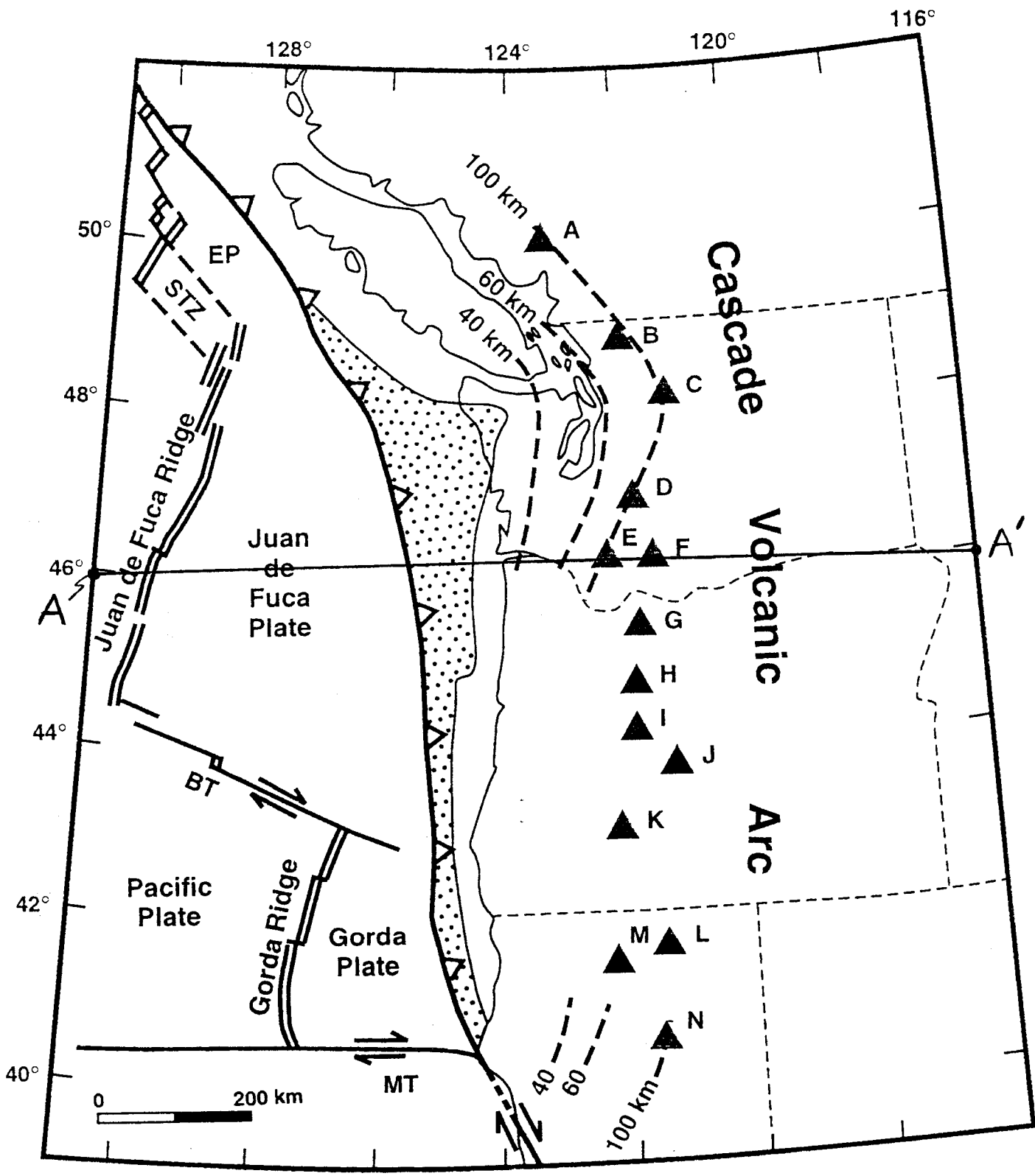
(1) In the space provided below, construct a geologic/tectonic cross section along line A-A' showing:



- the approximate surface topography
- the location of the oceanic and continental crust
- the Moho marking the crust-mantle boundary
- the accretionary prism
- the lithosphere/asthenosphere boundary
- arrows depicting the plate motions relative to fixed North America
- regions of probable partial melting

No
vertical
exaggeration.



(2) Briefly discuss any major uncertainties in your cross section.



-  Accretionary complex
-  Arc volcanoes
E = Mt. St. Helens
F = Mt. Adams

after Wells and Weaver (1994)
and Wilson (1993)