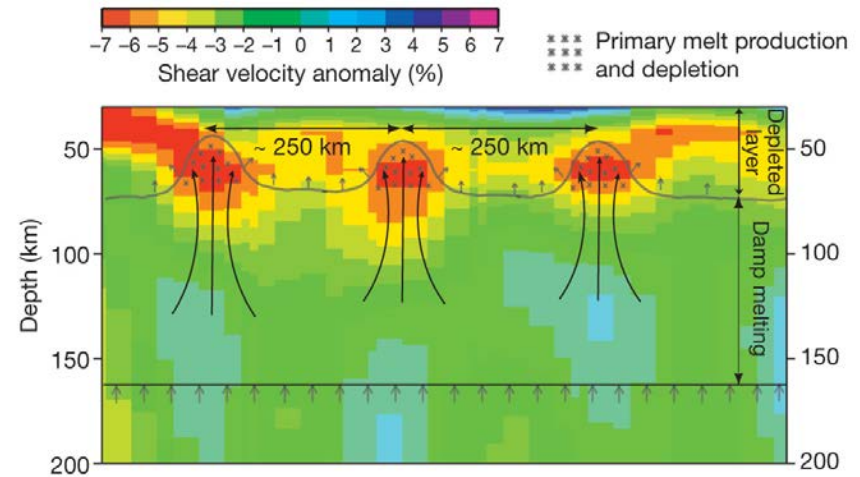
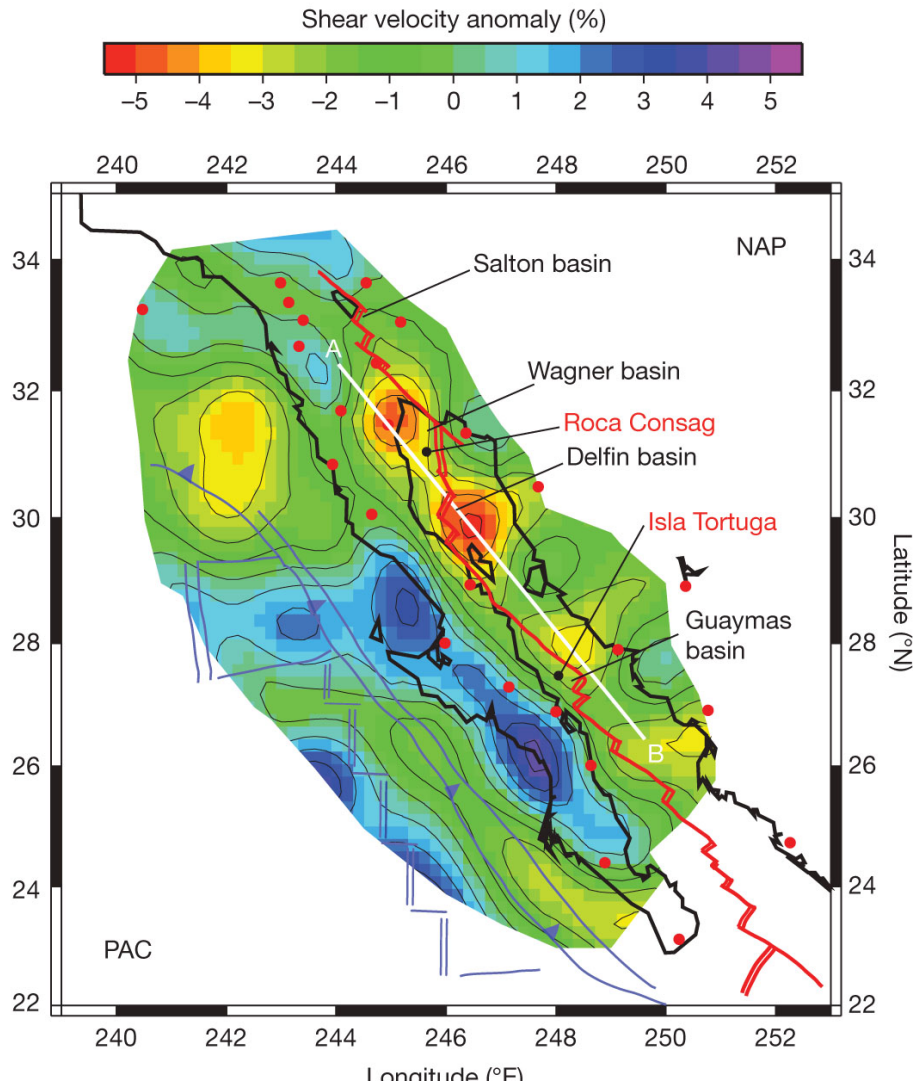


RIE Theme #2:

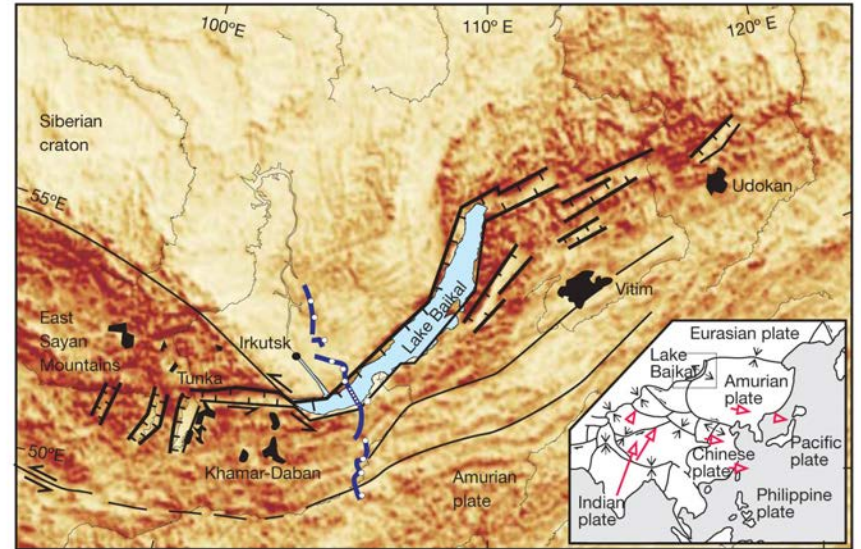
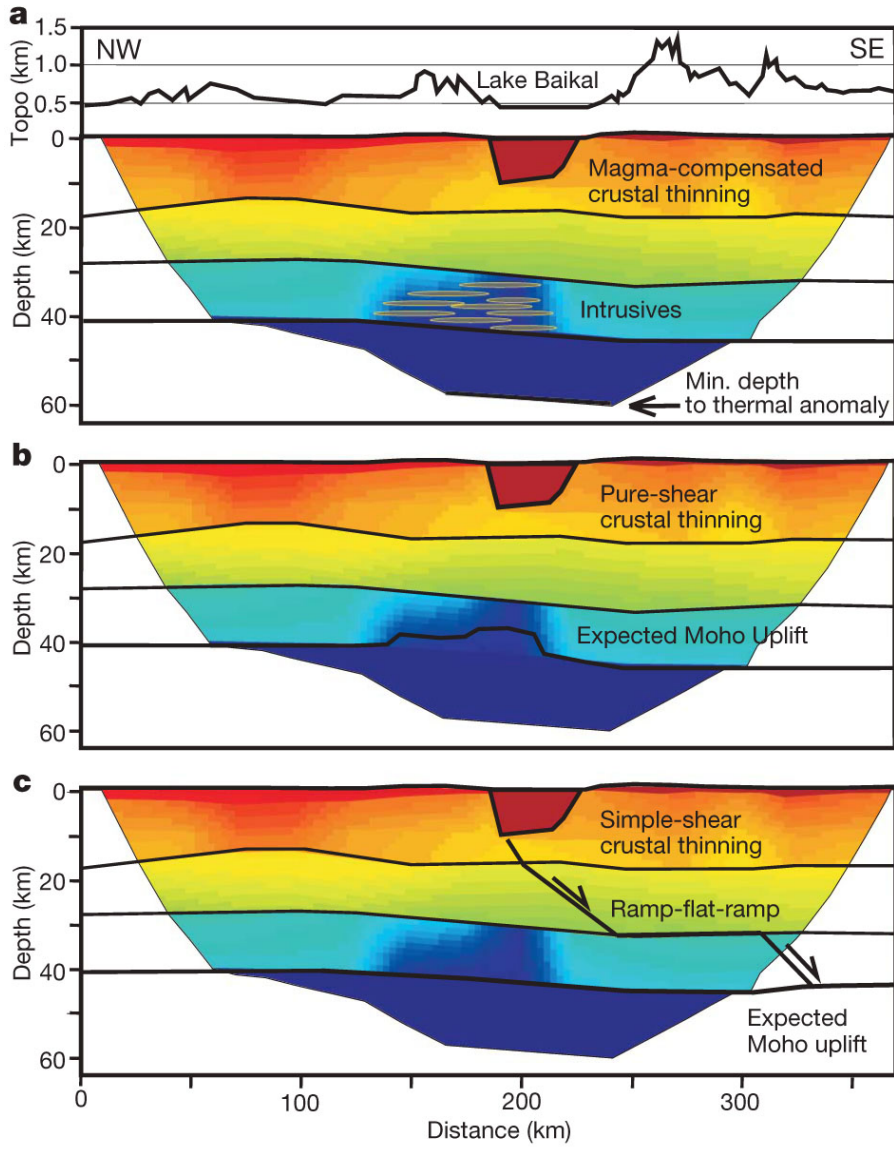
How do fundamental rifting processes (such as tectonics, magmatism, and erosion, transport, and sedimentation), and the feedbacks between them, evolve in time and space?

What is the relationship between deformation and magmatism at all levels of the lithosphere?



Partial melting and dynamic upwelling beneath the Gulf of California

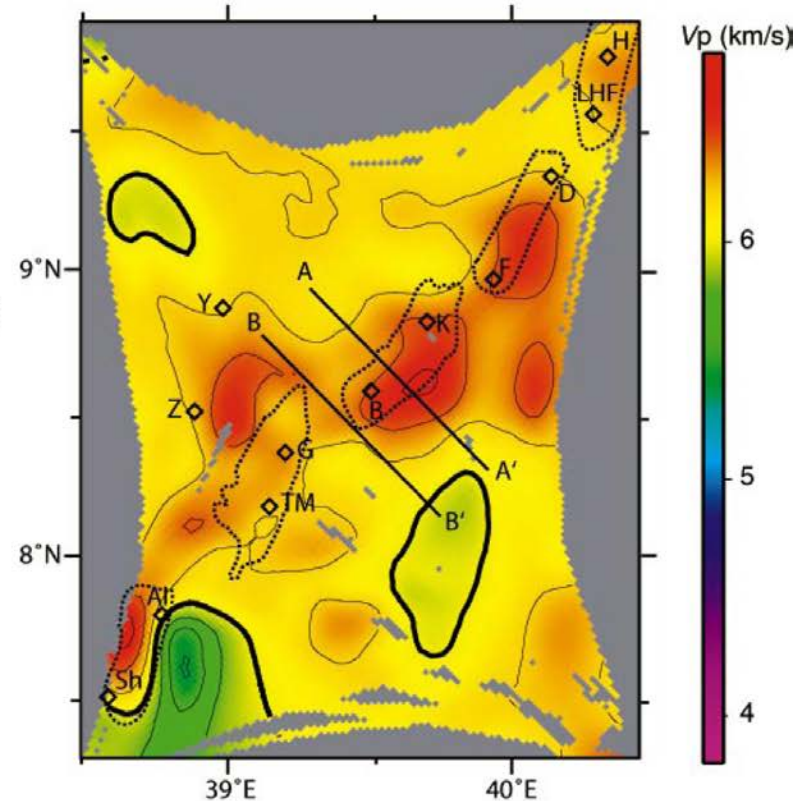
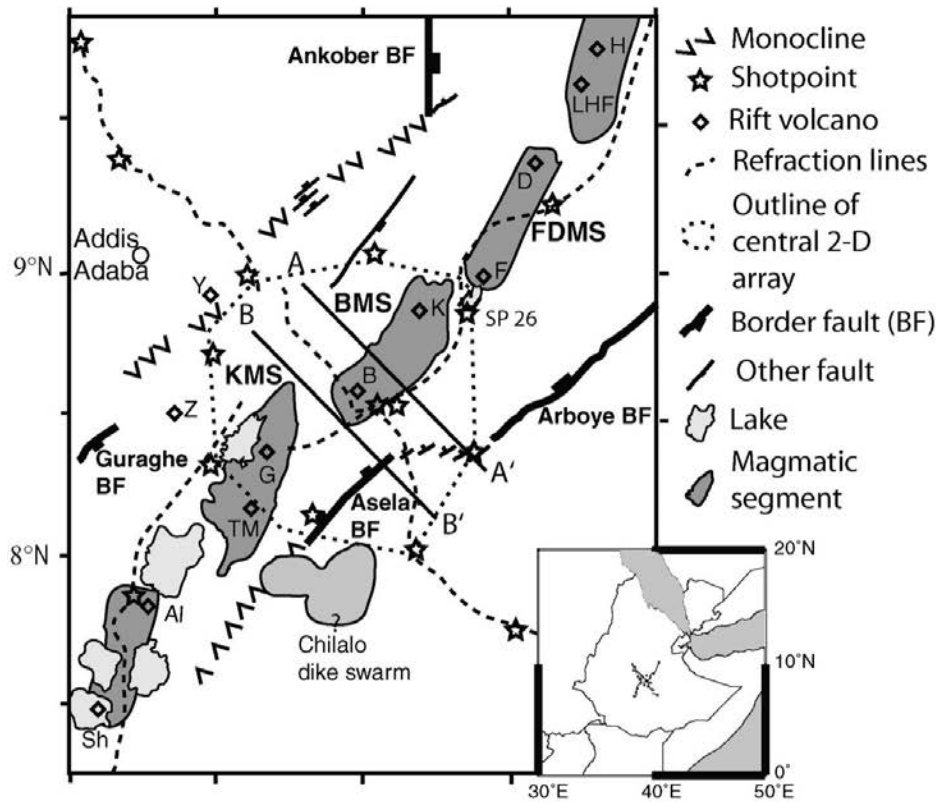
Wang et al., *Nature*, 2009



Magma-compensated rifting beneath Lake Baikal

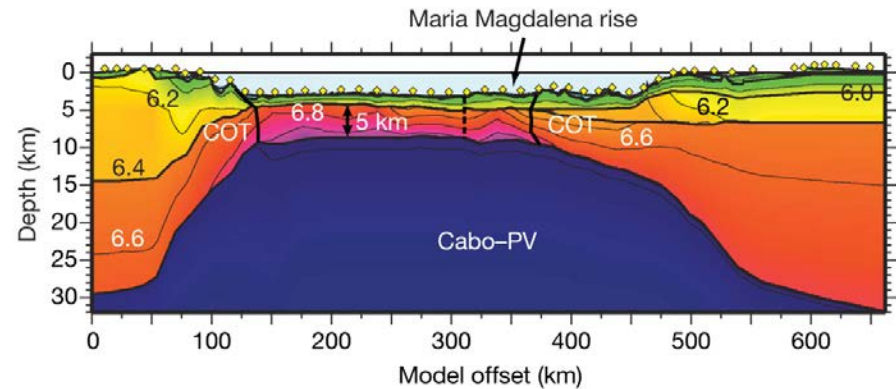
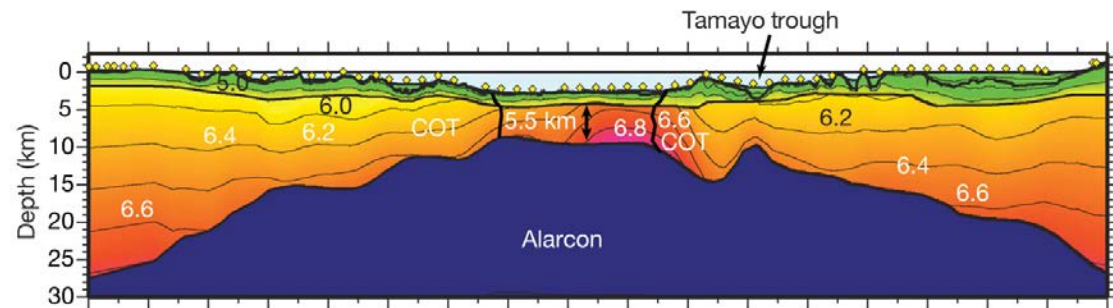
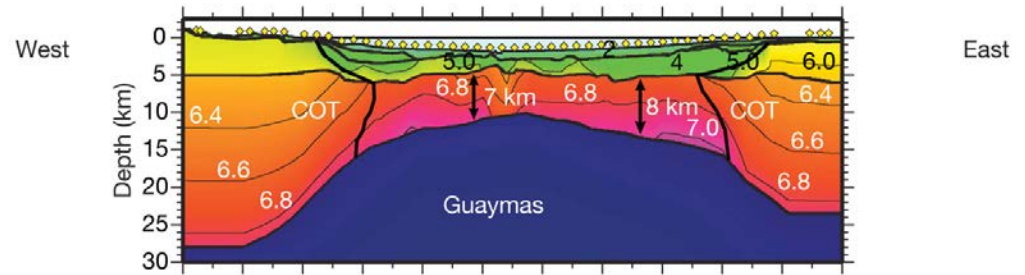
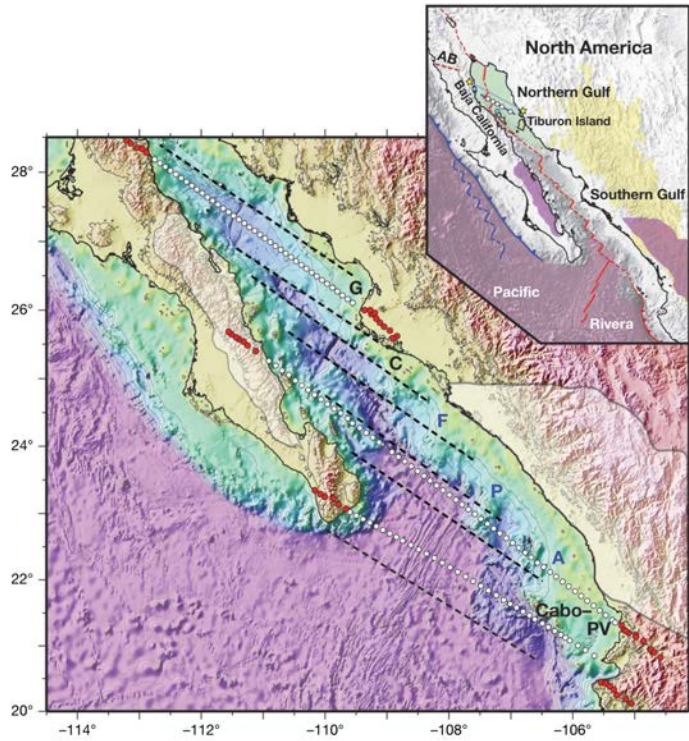
Thybo & Nielsen, *Nature*, 2009

What controls the evolution of segmentation and along-strike variations in extensional style and magmatism in rifts?



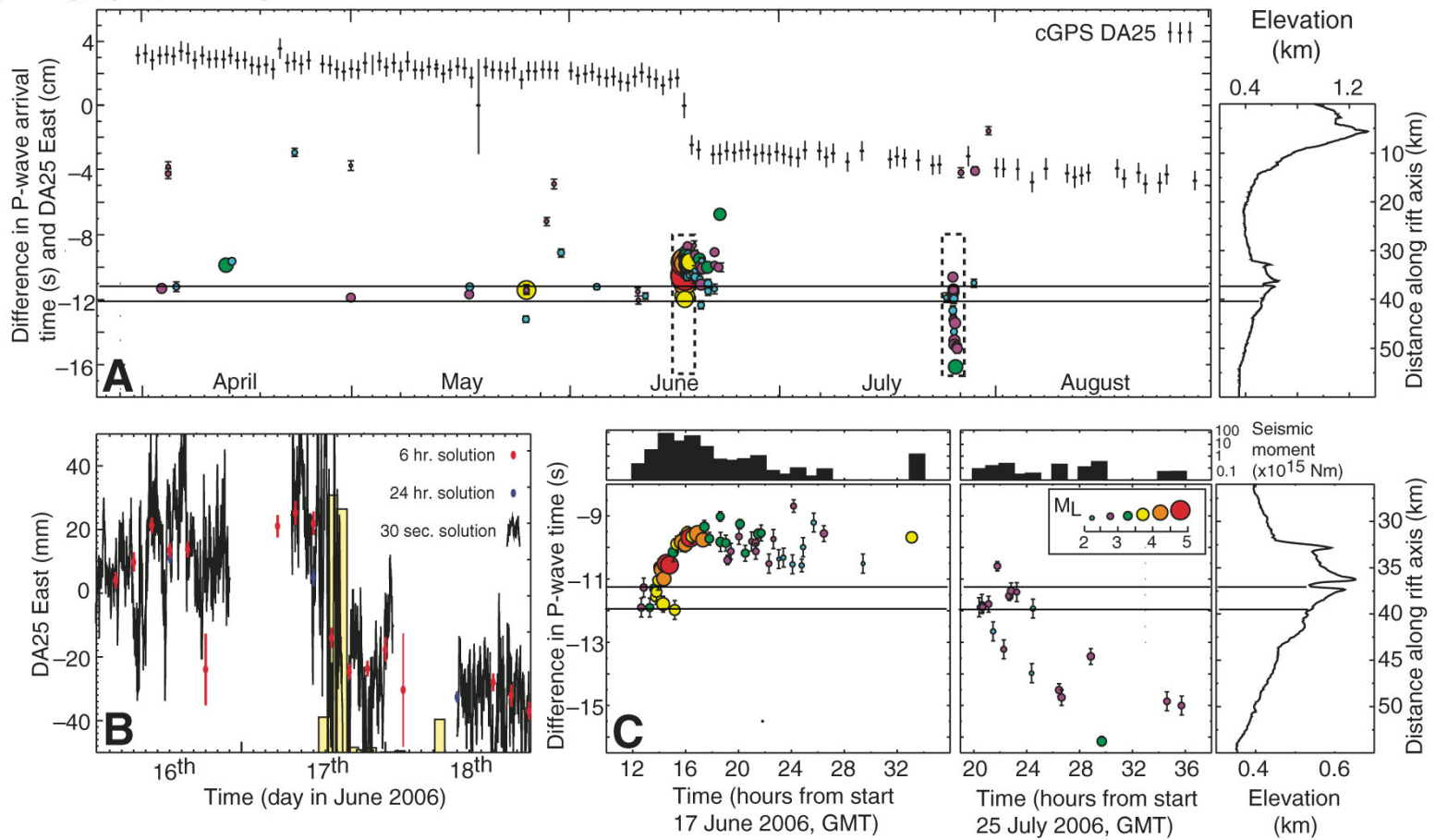
Keranen et al., *Geology*, 2004

Magmatic segmentation in Ethiopia



Changes in magmatism and deformation style in the Gulf of California

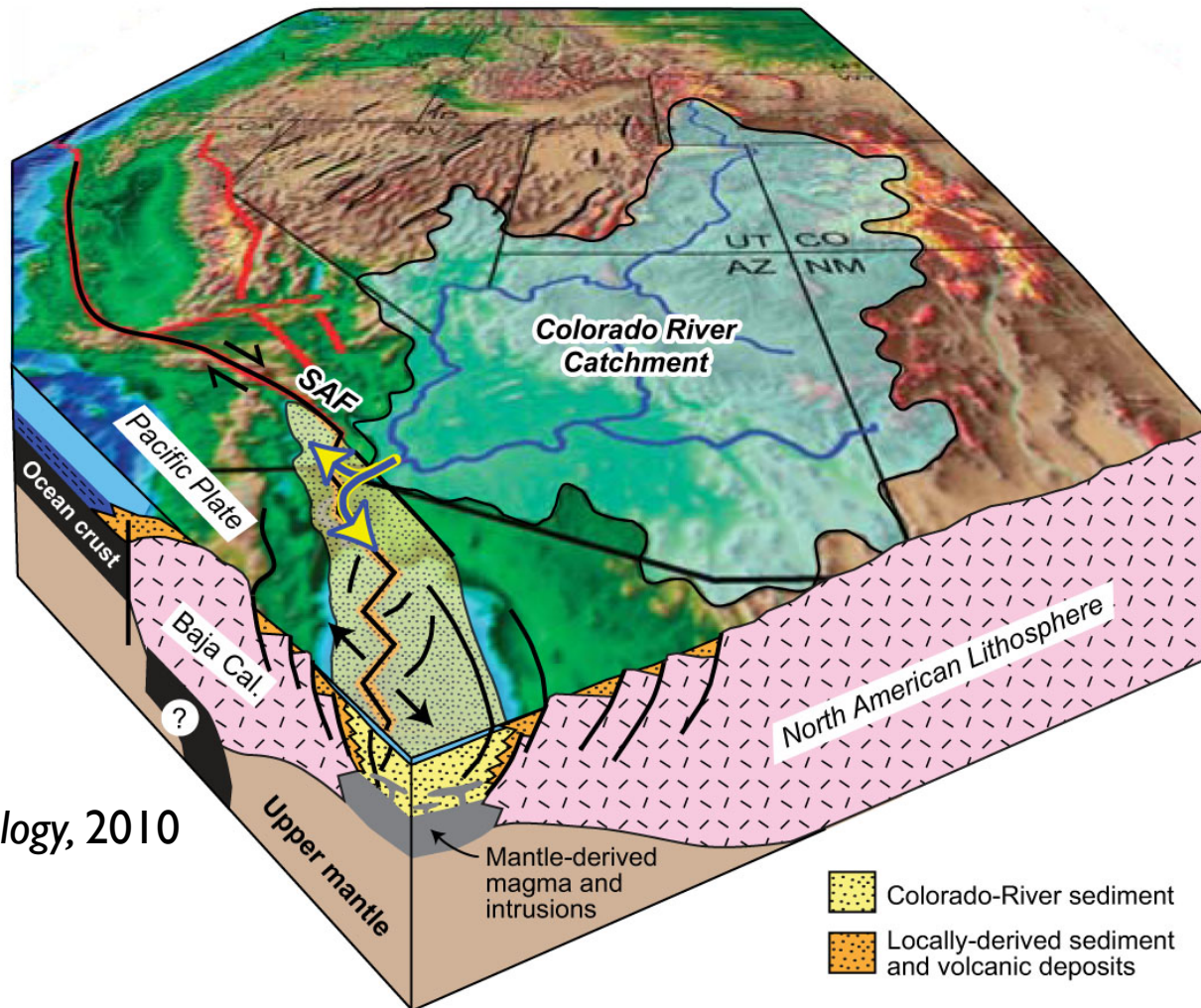
Lizarralde et al., *Nature* 2007



Lateral dike injection events along segment in Afar in June and July 2006

Keir et al., *Geology*, 2009

How do erosion, sediment transport, and deposition vary with climatic and tectonic forcing in rifts?



Dorsey, *Geology*, 2010