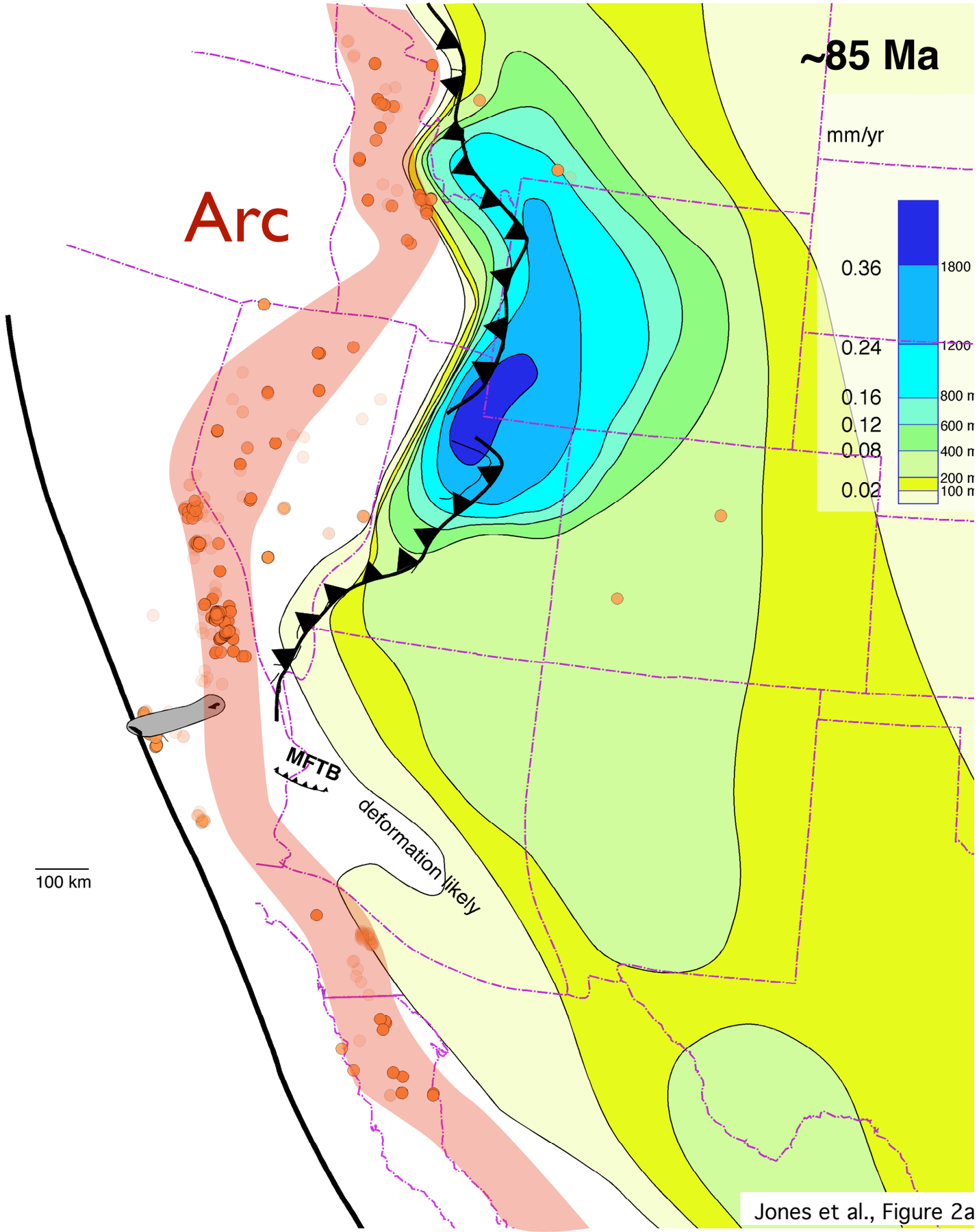
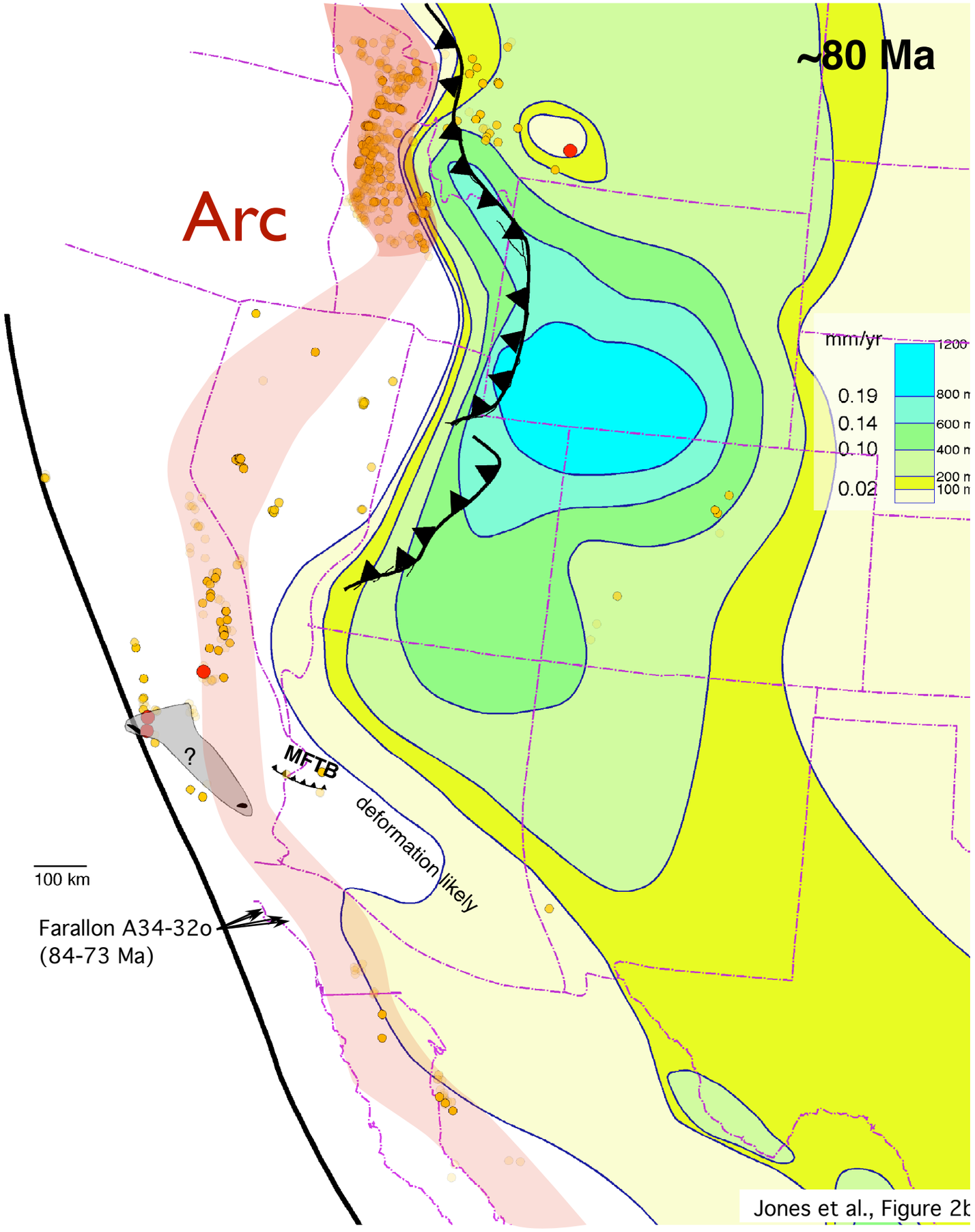


Sevier orogeny

Classic "Andean margin"

- -arc
- -fold-and-thrust
- -foredeep

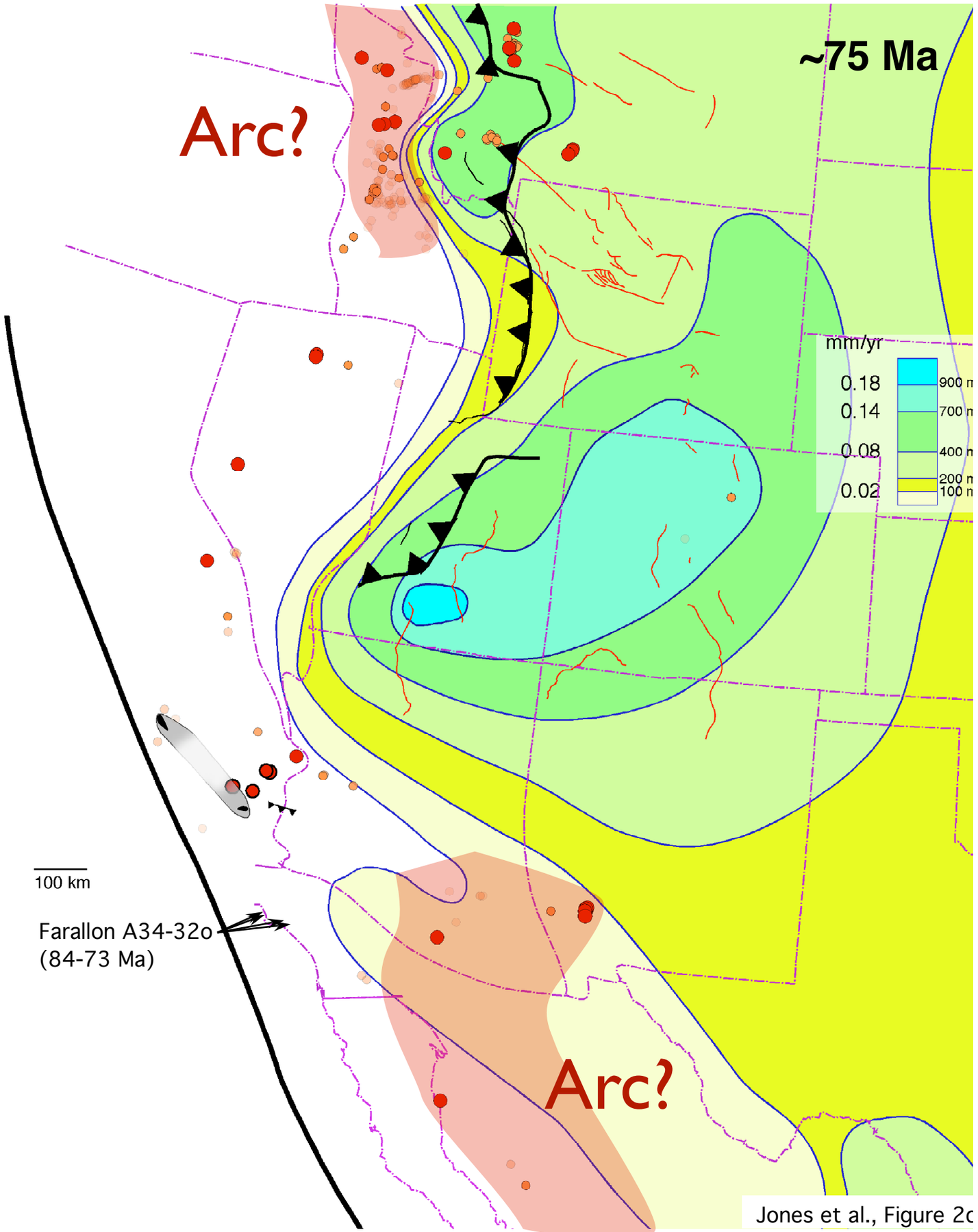
Jones et al., *Geosphere* 2011



Sevier orogeny

Classic "Andean margin" fading
- -arc dying Sierra Nevada, Mojave?, Penninsular Ranges
- -fold-and-thrust stops, southern Nevada
- -foredeep broadens

Jones et al., *Geosphere* 2011



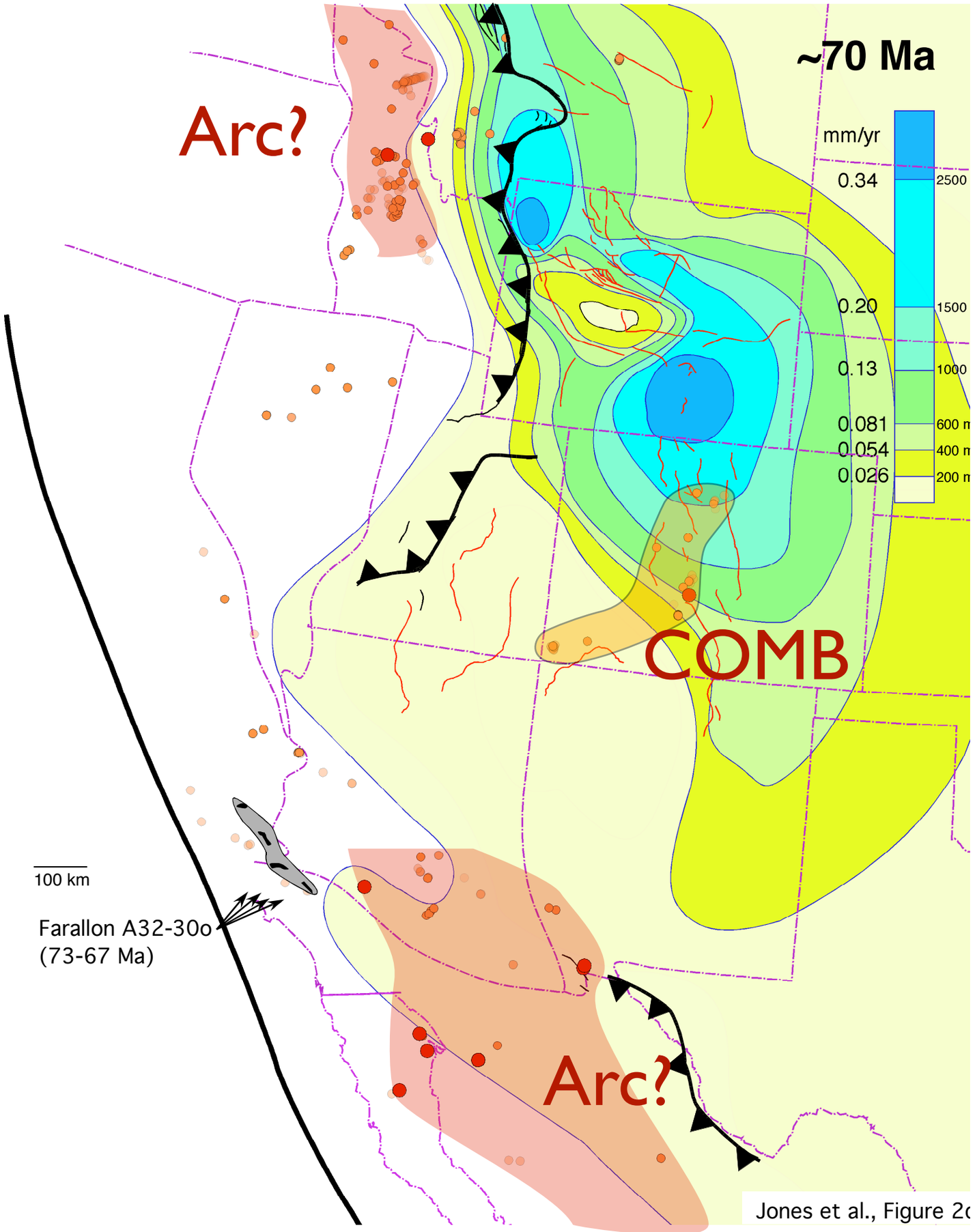
Sevier/Laramide orogeny

Classic "Andean margin" disrupted

- -arc dead Sierra Nevada, Nevada
- -arc? in Mojave; eastward in Mexico
- -fold-and-thrust stops, southern Nevada
- -foreland deformation starts
- -foredeep nearly gone, sedimentation sweeps to east

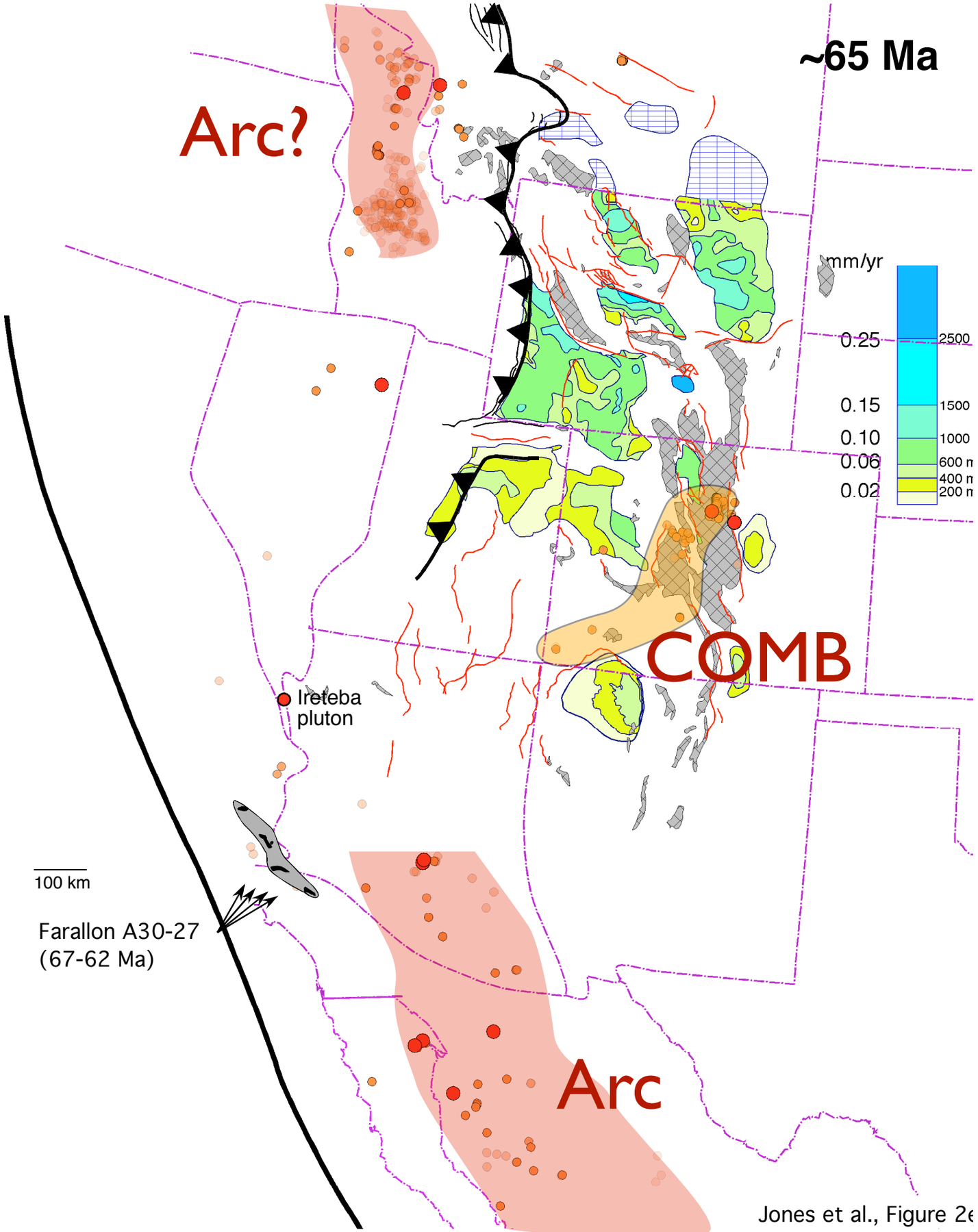
Jones et al., *Geosphere* 2011

Laramide orogeny



-limited volcanism in west typically peraluminous (crustal melts?)
-Colorado Mineral Belt established
-fold-and-thrust stops, southern Nevada-Arizona
-foreland deformation substantial
-foredeep limited, sedimentation focused to east

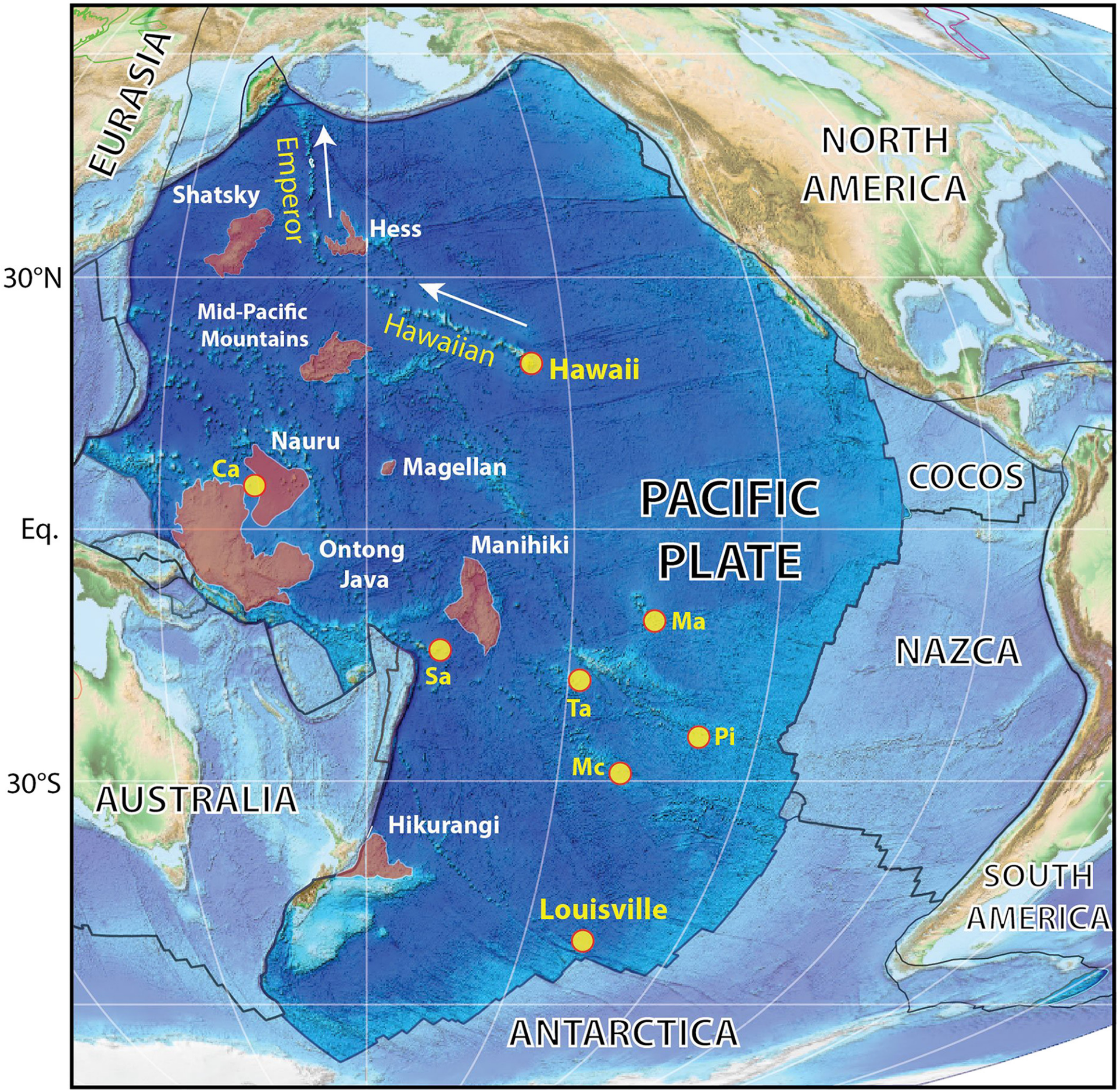
Jones et al., *Geosphere* 2011



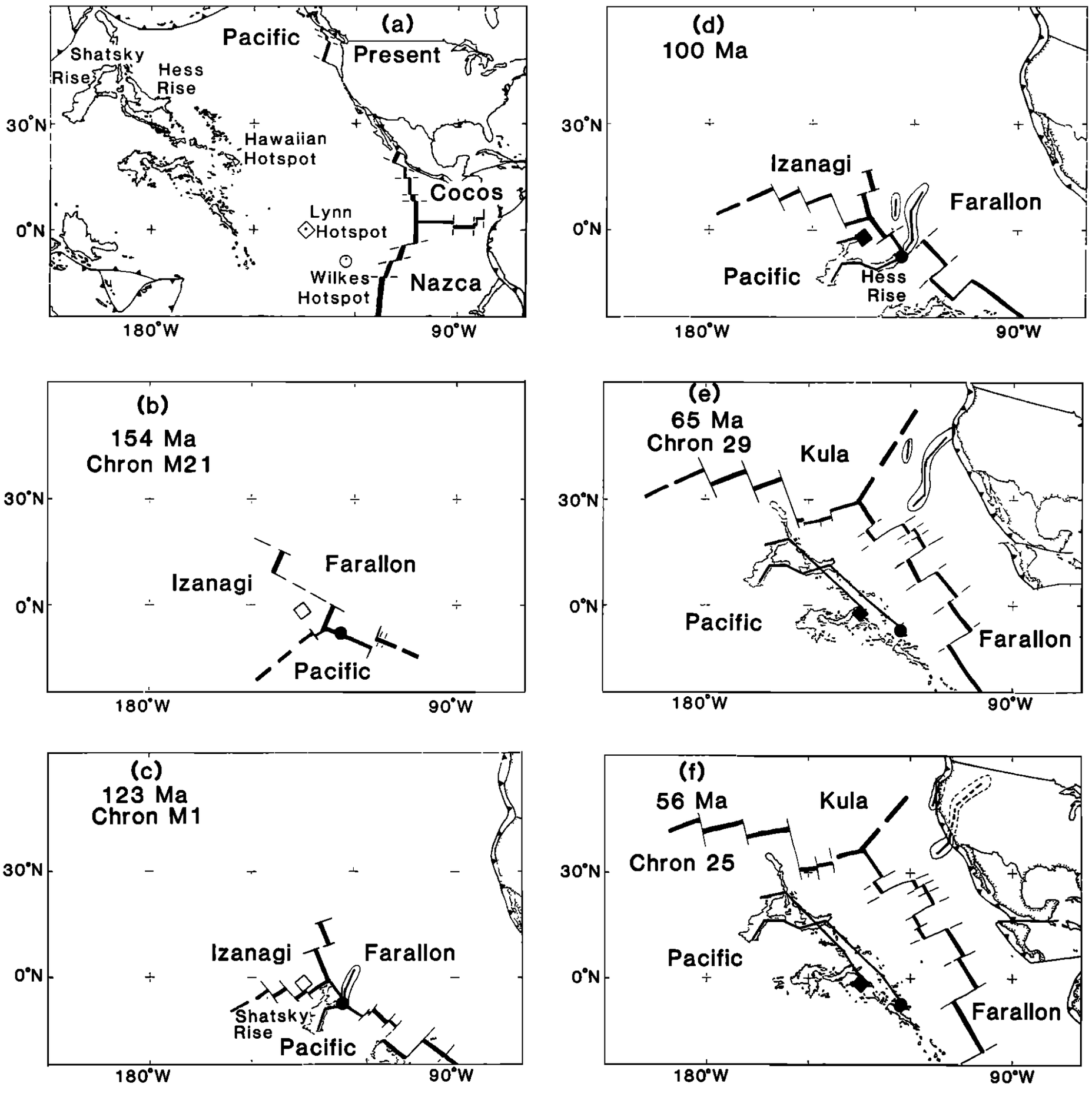
Laramide orogeny

-limited volcanism in west typically peraluminous (crustal melts?)
-Colorado Mineral Belt active
-fold-and-thrust stops, southern Nevada-Arizona
-foreland deformation well-defined
-thrust-belt foredeep absent, sedimentation focused in local basins

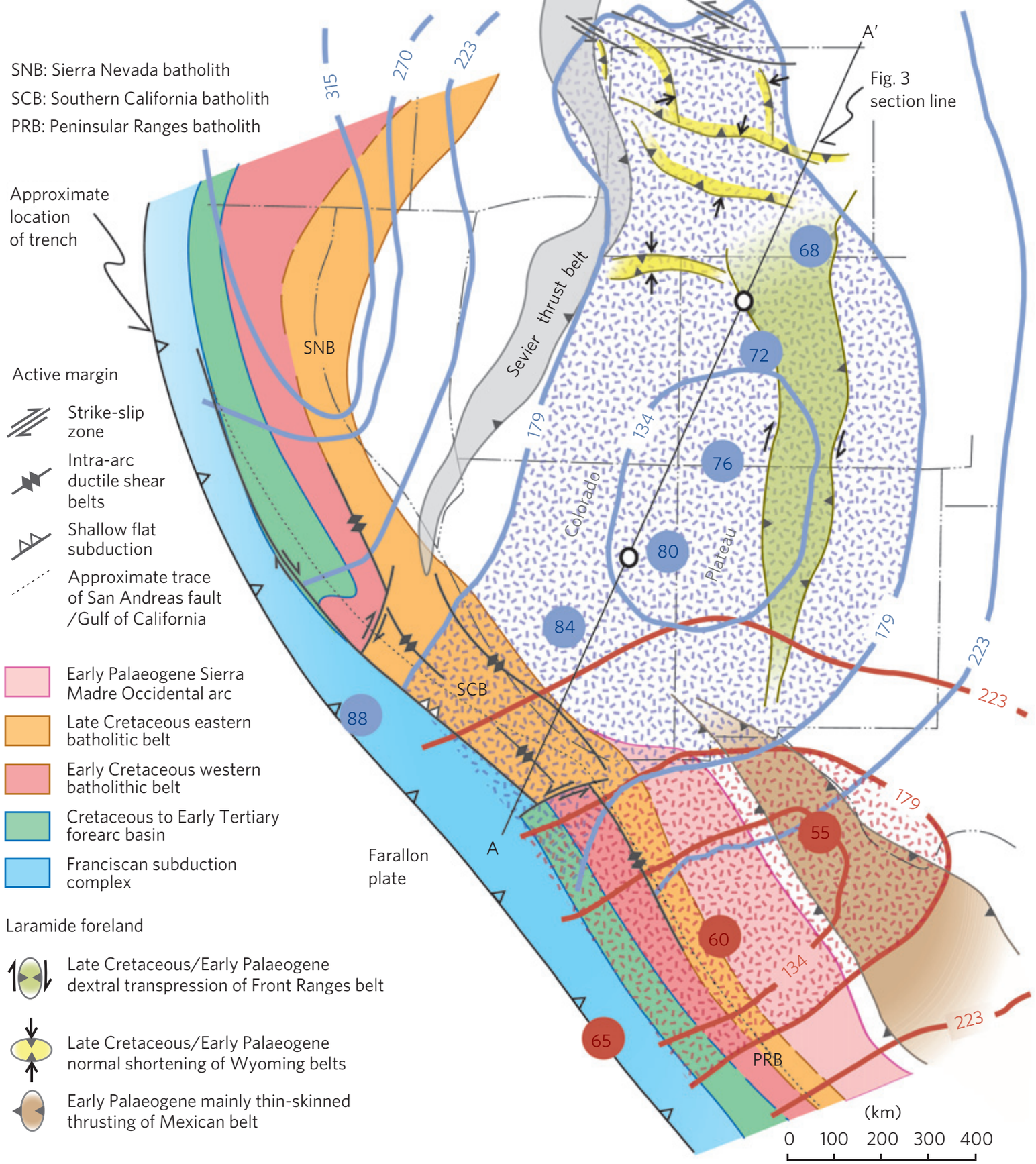
Jones et al., *Geosphere* 2011



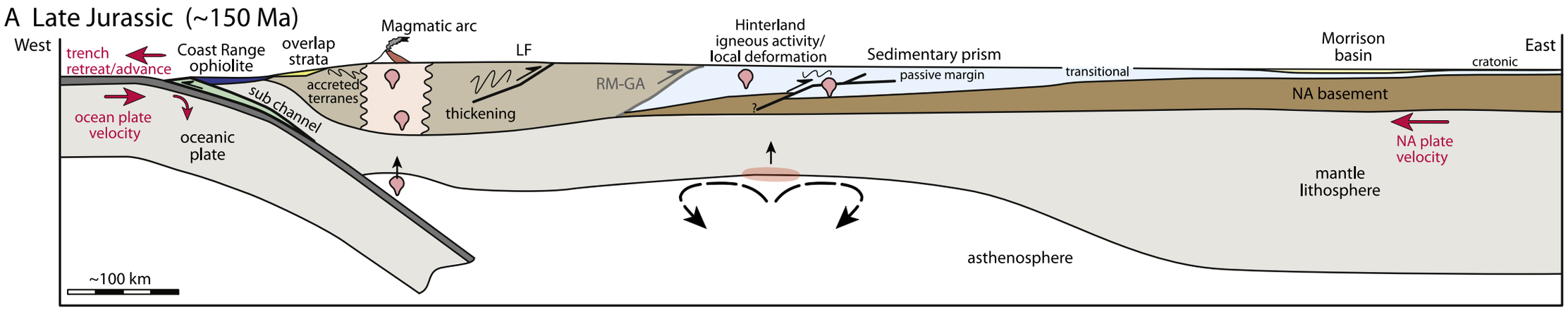
Torsvik et al., G^3, 2019



Henderson et al., *Tectonics*, 1984

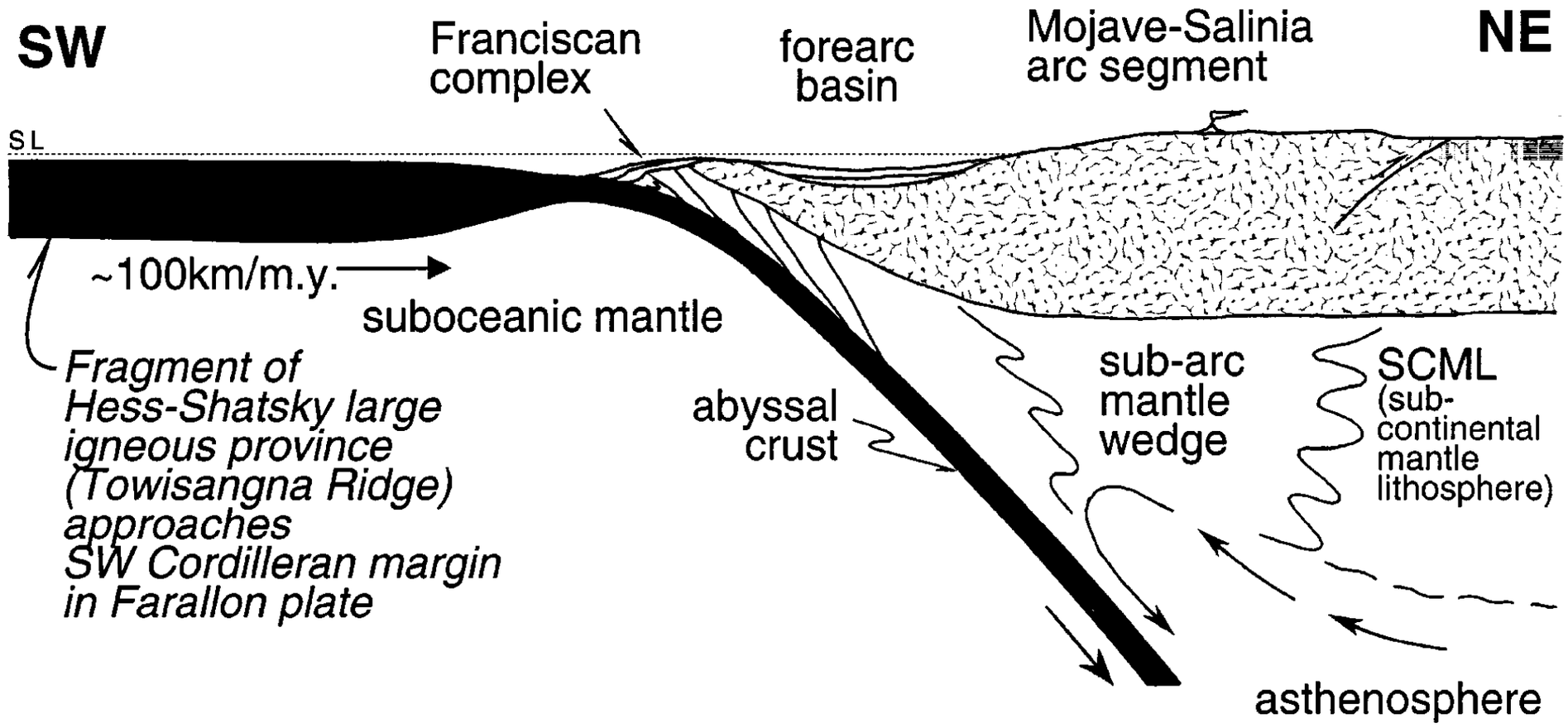


Liu et al., *Nature Geosc*, 2010

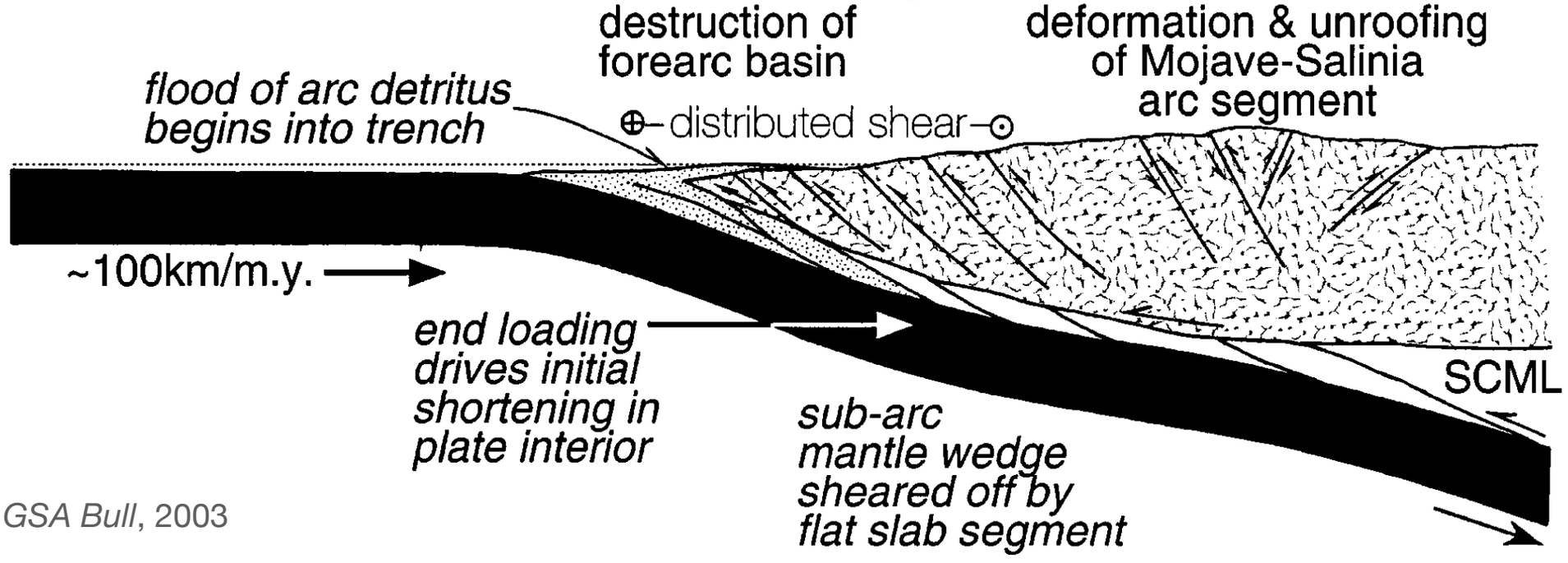


Yonkee & Weil, *Earth Sci Rev*, 2015

A. 90-85 Ma: Just prior to slab segmentation

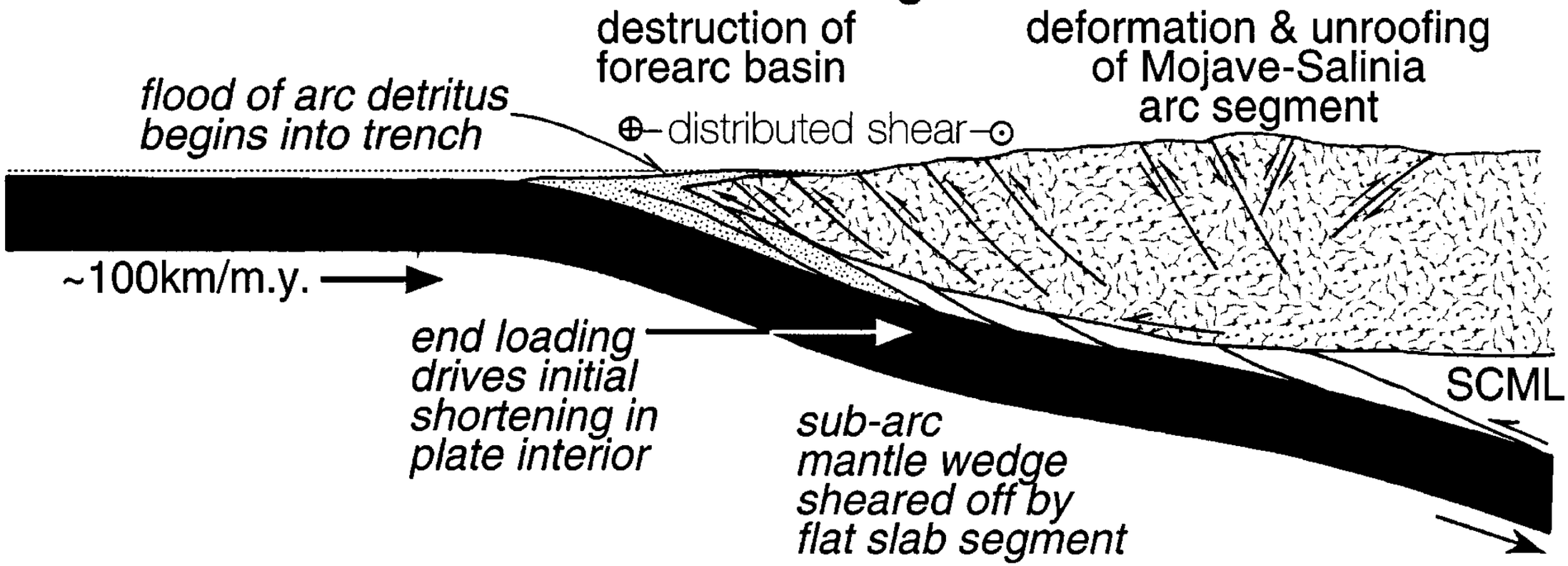


B. ca.80 Ma: Laramide shallow slab segment subduction

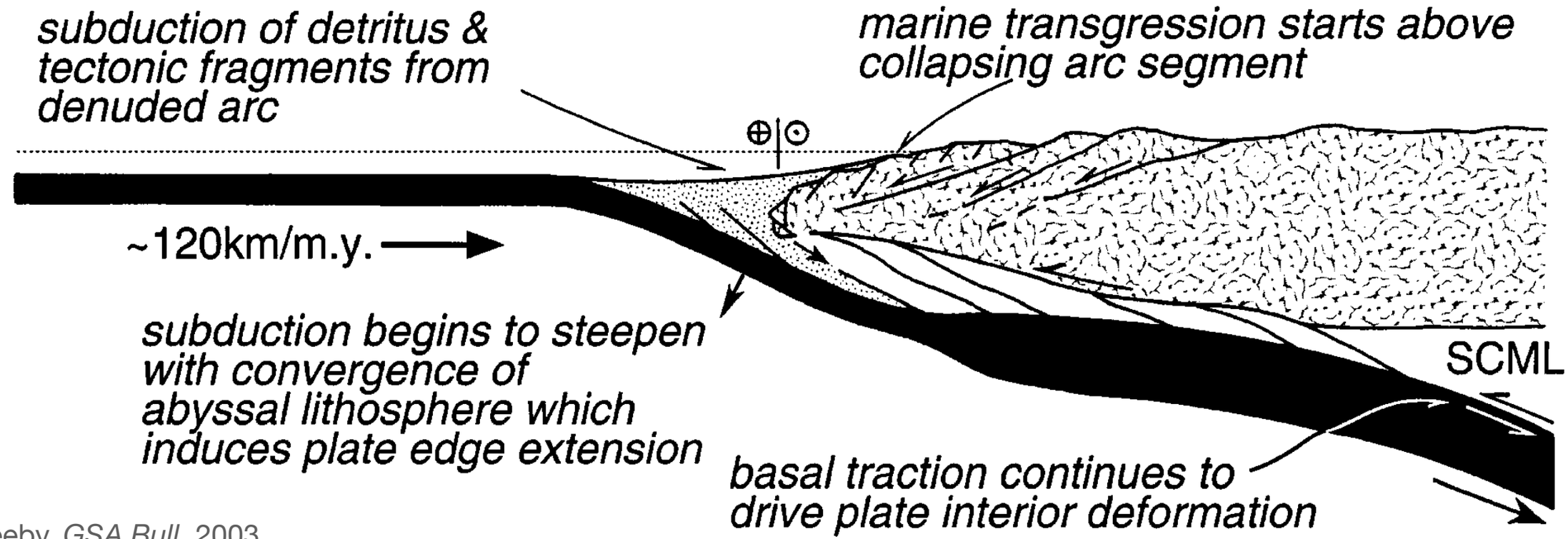


Saleeby, *GSA Bull*, 2003

B. ca.80 Ma: Laramide shallow slab segment subduction

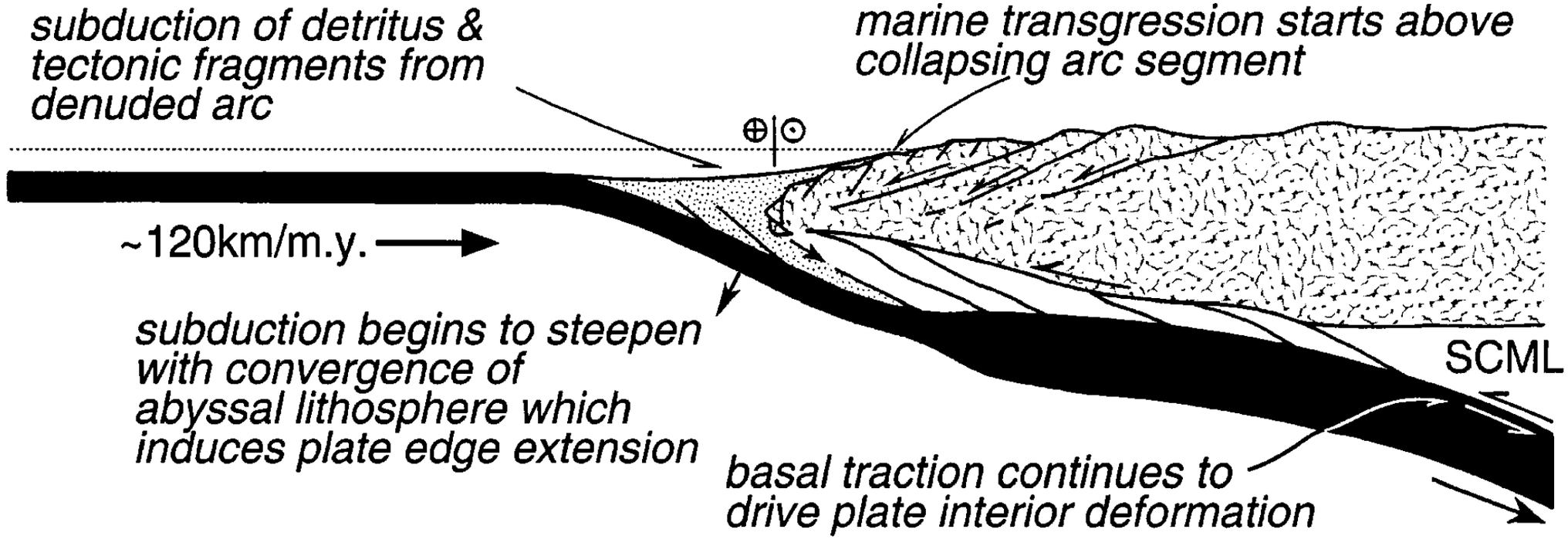


C. ca.70 Ma: Extensional collapse starts in wake of shallow slab segment

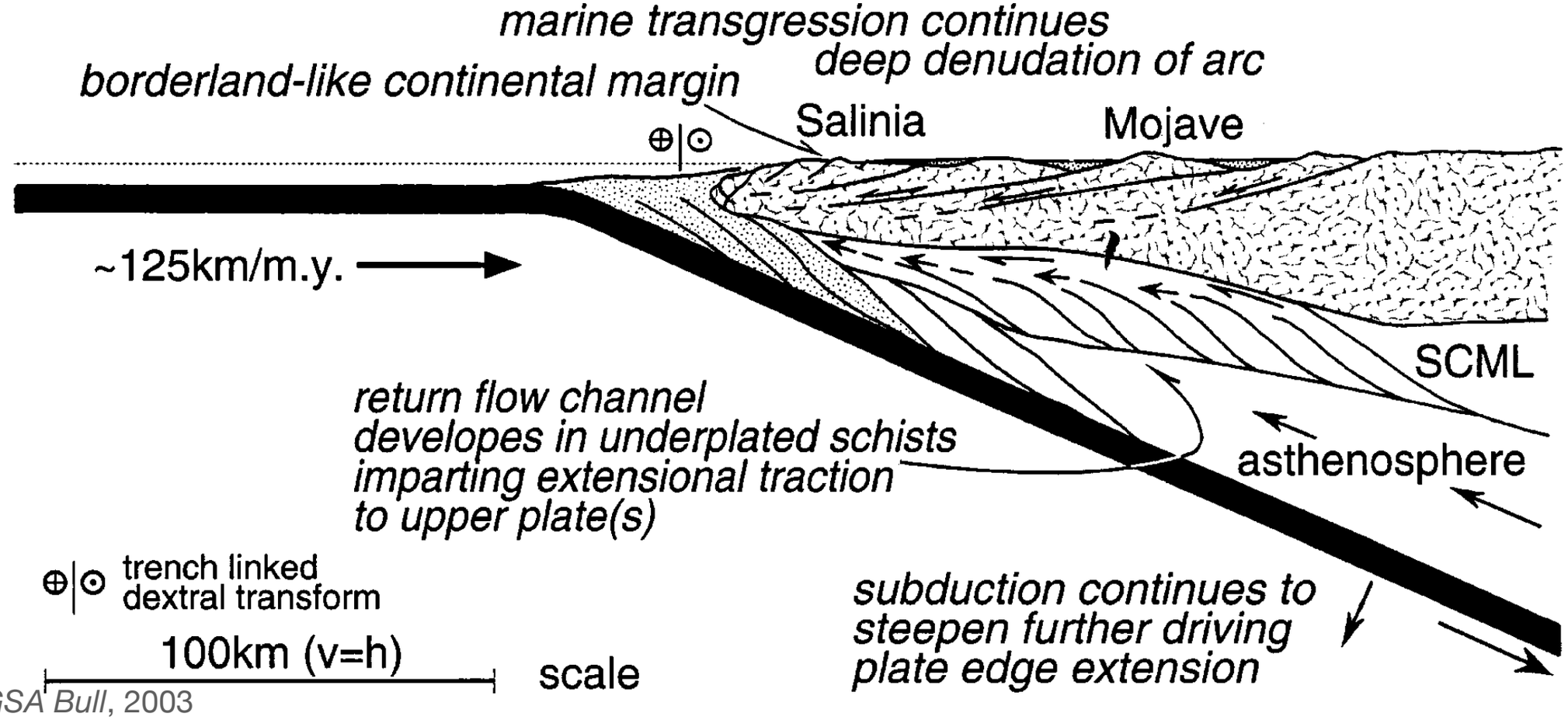


Saleeby, *GSA Bull*, 2003

C. ca.70 Ma: Extensional collapse starts in wake of shallow slab segment



D. ca.60 Ma: Plate edge orogen collapsed above steepened slab



Saleeby, *GSA Bull*, 2003

Potential Laramide/Oceanic Plateau Topics

1. The track of the oceanic plateau ("Shatsky Rise Conjugate") is sufficiently well established that meaningful tests can be made. [Basically, if we don't know where it was and instead are using the geologic changes in North America to plot its course, those geologic features cease to be useful as a test of the hypothesis; we then have to distinguish the features used to set the track from whatever is left that might test the idea].

2. Subduction of an oceanic plateau will cause surface uplift in the continent. [This is a subset of the models out there]

3. Subduction of an oceanic plateau will lead to subsidence in the continental interior [Also a subset of models]

4. Subduction of an oceanic plateau will usher in flat slab subduction

5. Subduction of the Shatsky Conjugate produced the Rand+/-Orocopia+/-Pelona schists in the Mojave Desert

6. Timing of vertical changes in surface elevation (see points 2 and 3) is in agreement with geological proxies such as changes in fluvial systems, major unconformities, etc.

7. The stress field induced by the Shatsky Conjugate is consistent with coeval deformation in North America

8. Subduction of the Shatsky Conjugate has left fragments in coastal accretionary complexes

9. Magmatism patterns are consistent with the history of subduction of the Shatsky Conjugate.

10. Timing of deformation in the Laramide is consistent with the passage of the Shatsky Conjugate.