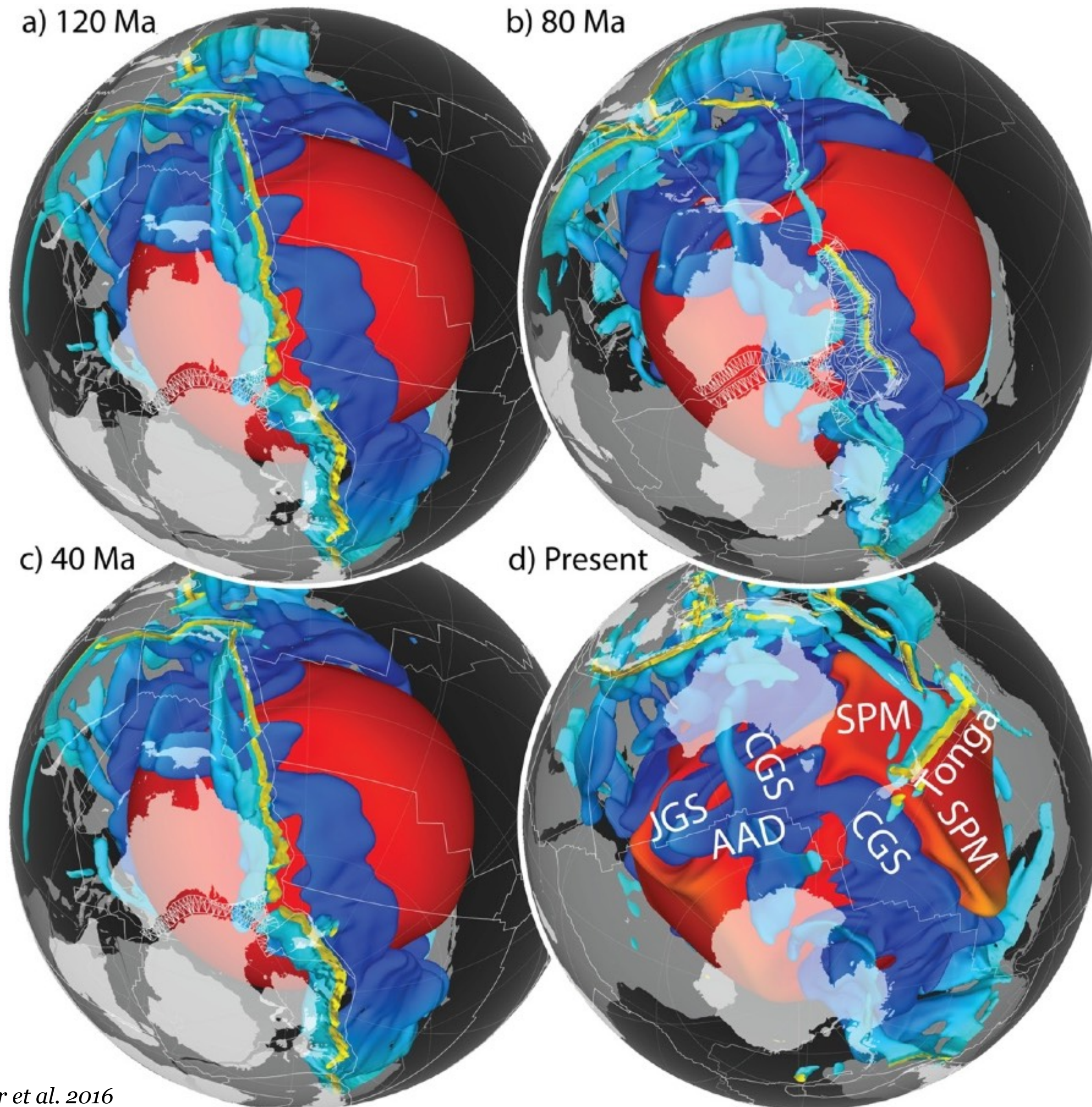


# Uplift mechanism of the Australian Eastern Highlands

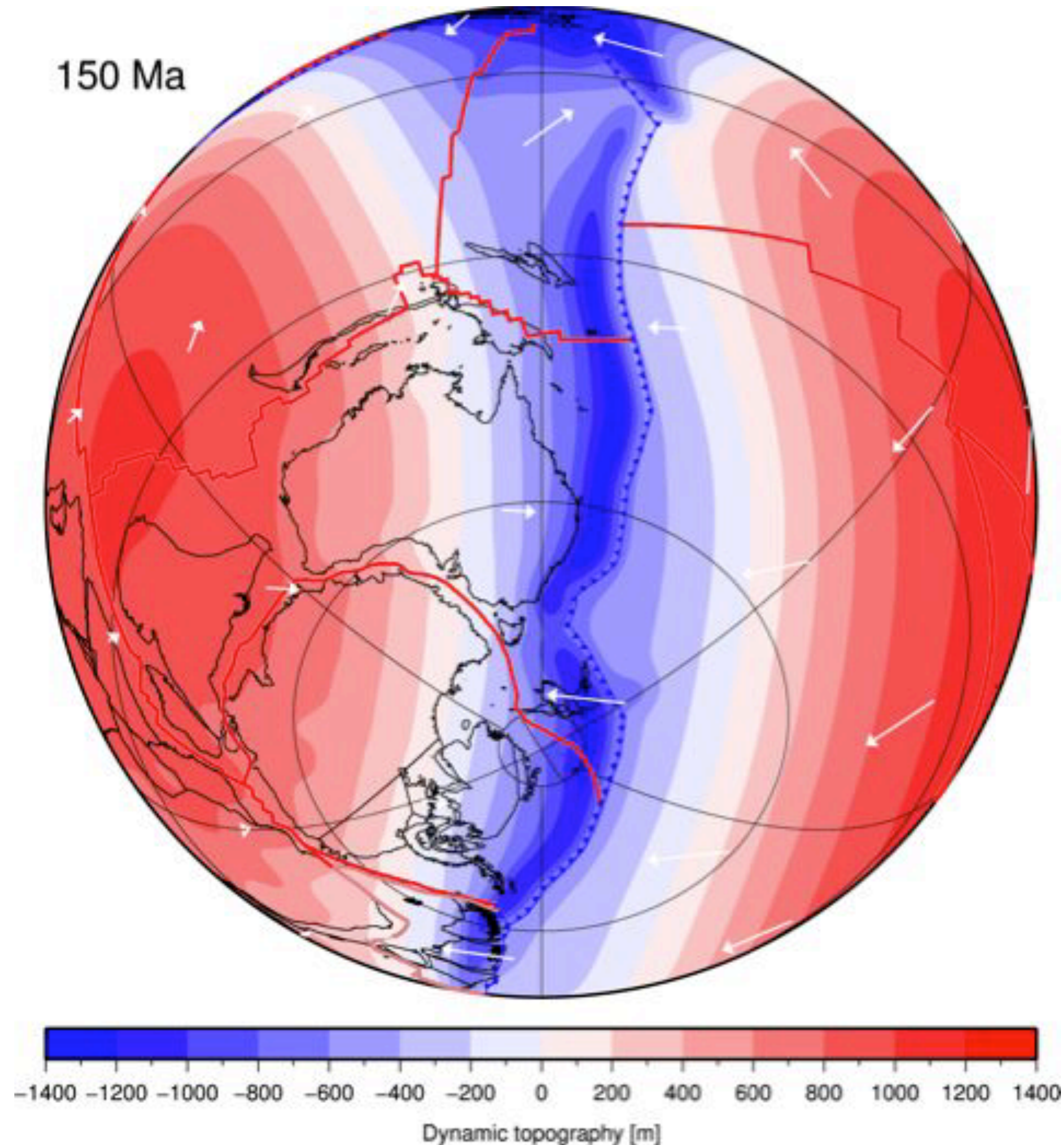


- *Passive margin mountains*
- Not formed by continental collision like most mountain chains
- Two distinct phases of uplift
- Why and how does this work?
- Large gravity/topography ratio suggests a dynamic uplift mechanism, driven by the interaction of a moving continent and mantle flow through time



# Formation of Australian continental margin highlands

Uplift history spanning over 100 million years



- 120-80 Ma: dynamic uplift of 400-600 m driven by eastward motion of eastern Australia's margin away from the sinking eastern Gondwana slab
- ~60 Ma: tectonic quiescence in the south
- 40-0 Ma: renewed uplift of ~700 m in the Snowy Mountains induced by gradual motion of the margin over the edge of the large southwest Pacific superswell
- What effects have these processes on landscape evolution?