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Dynamic Topography of the Australian Continent and its Margins

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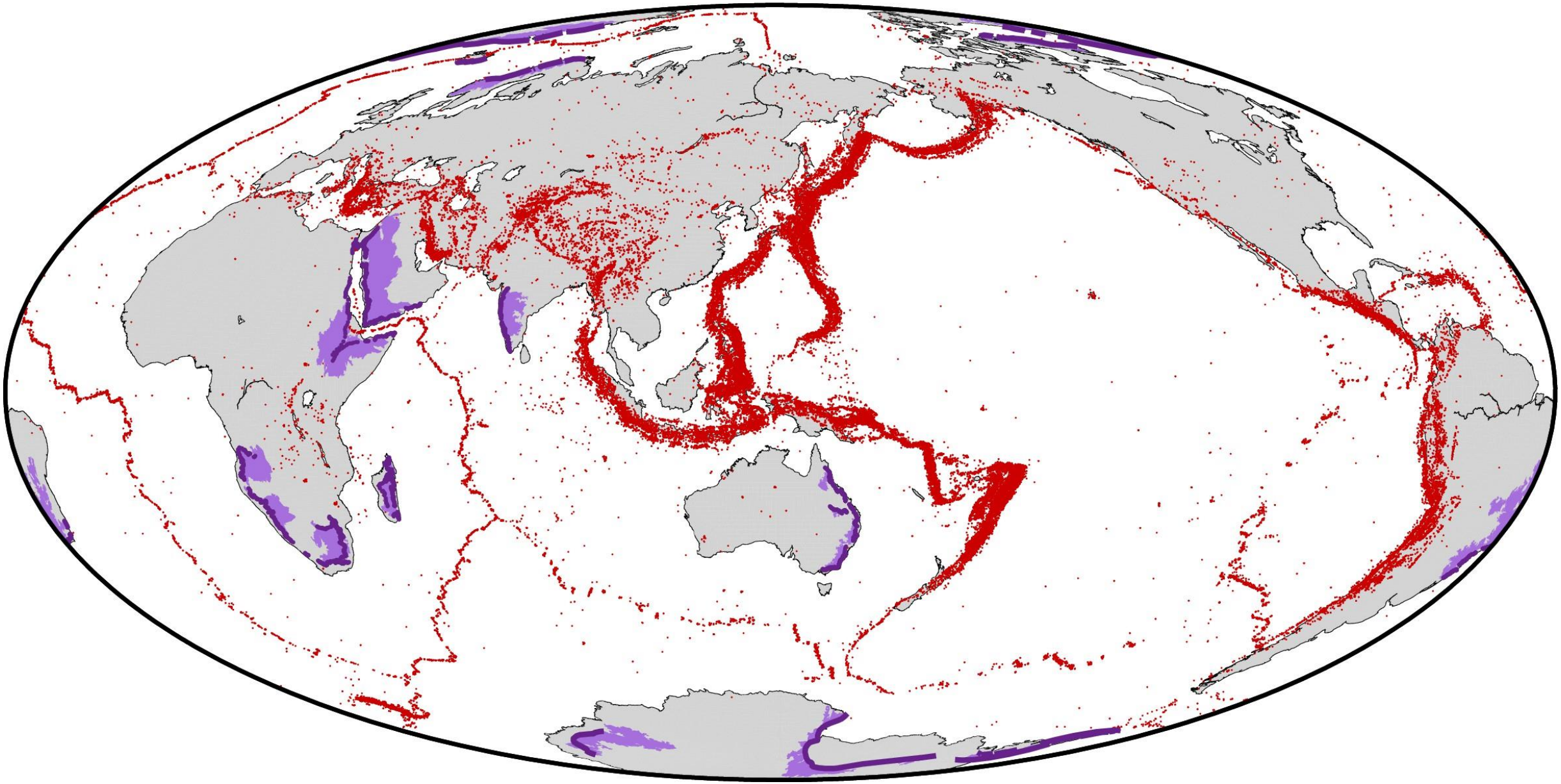
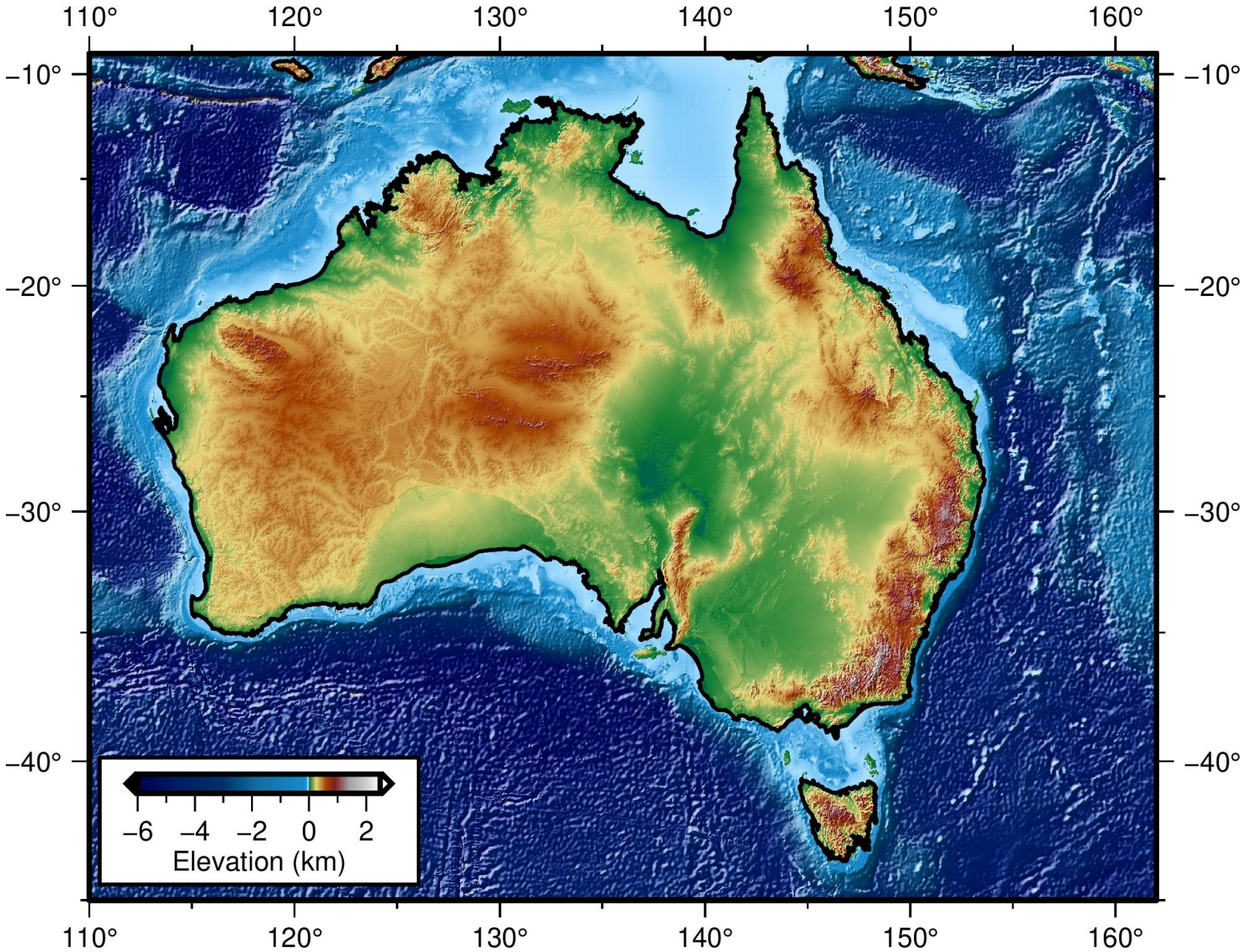
The Australian Continent – Earthquakes and Escarpments

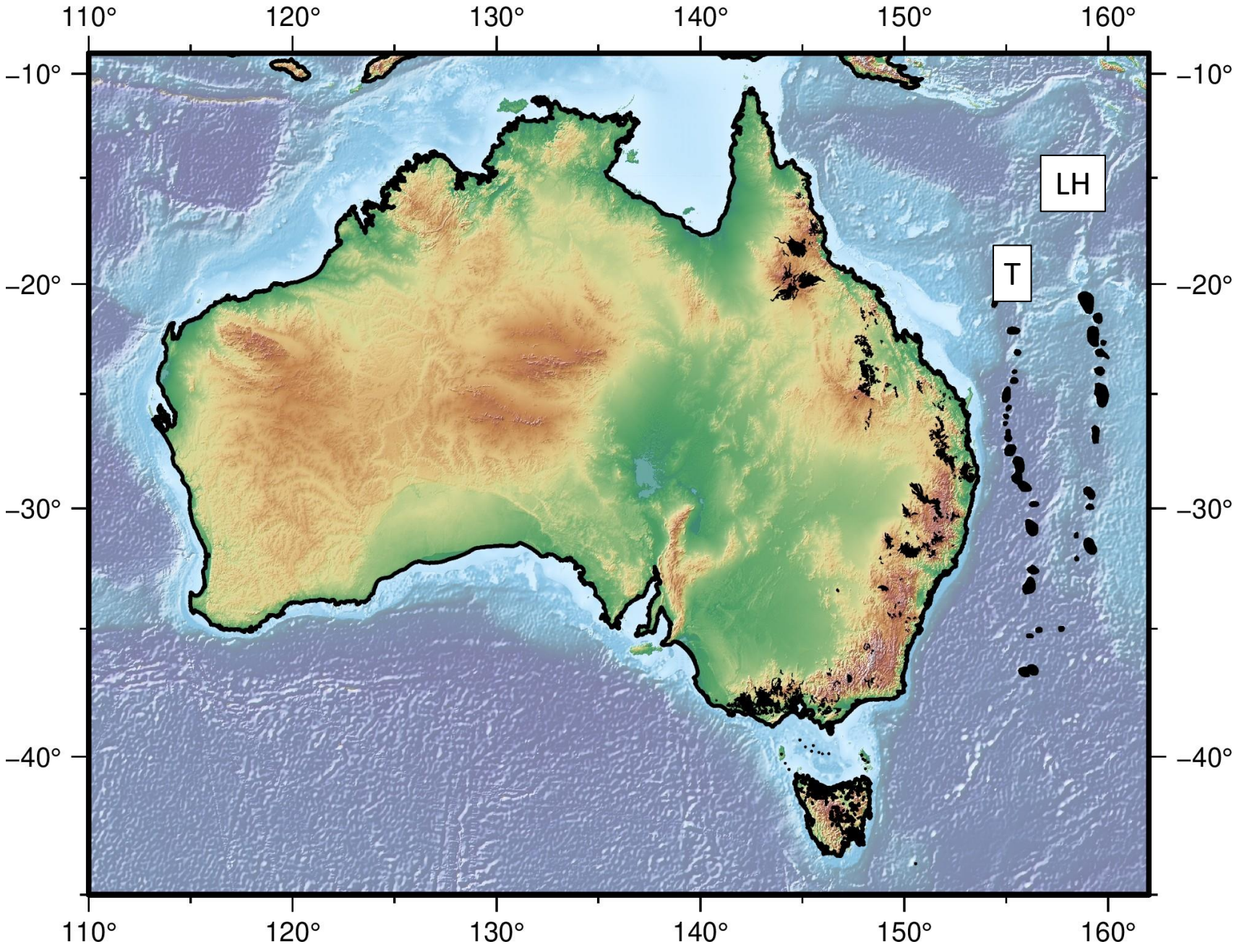


Engdahl et al. (1998); Holdt et al. (*in prep.*)

The Australian Continent – Topography

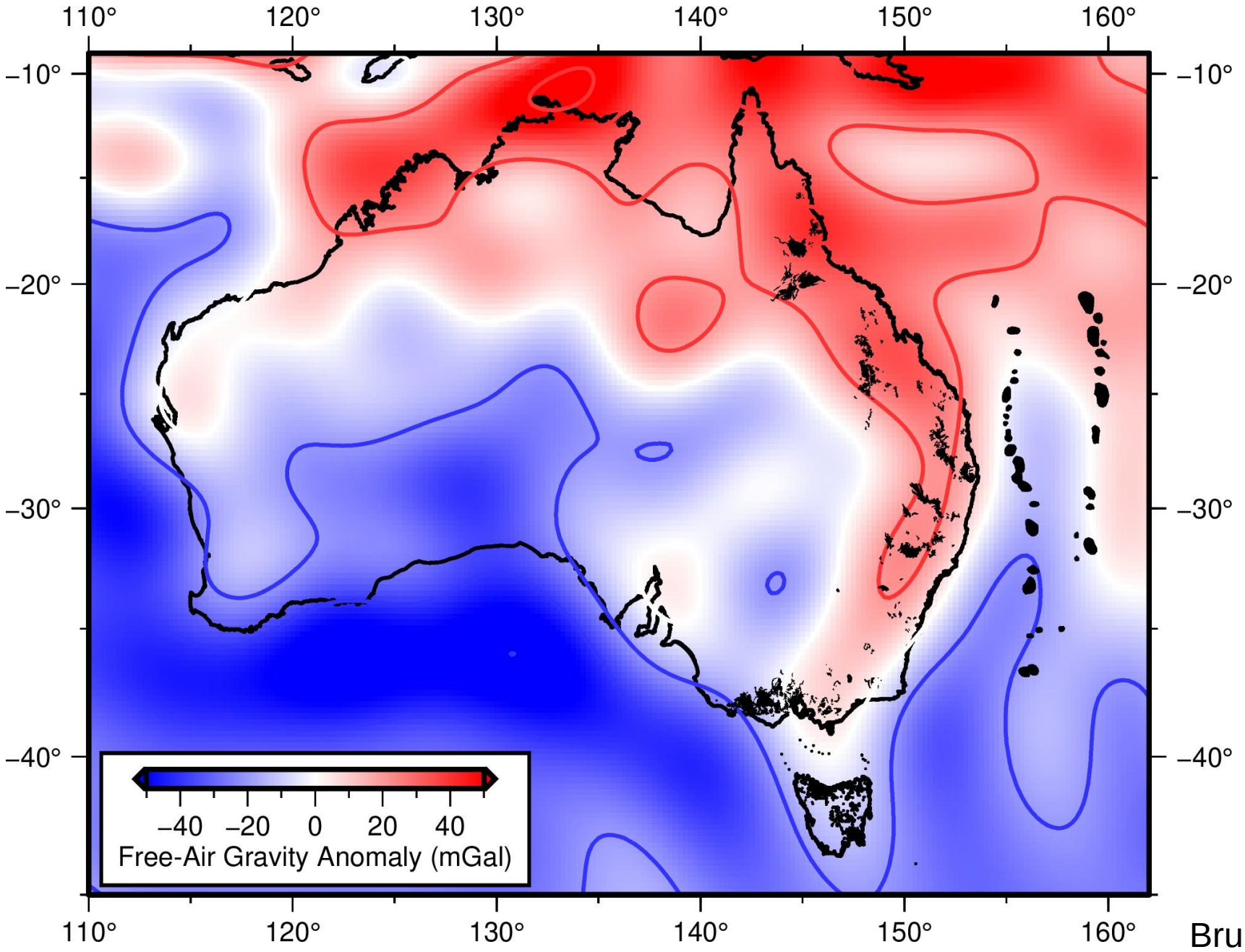


The Australian Continent – Basaltic Magmatism



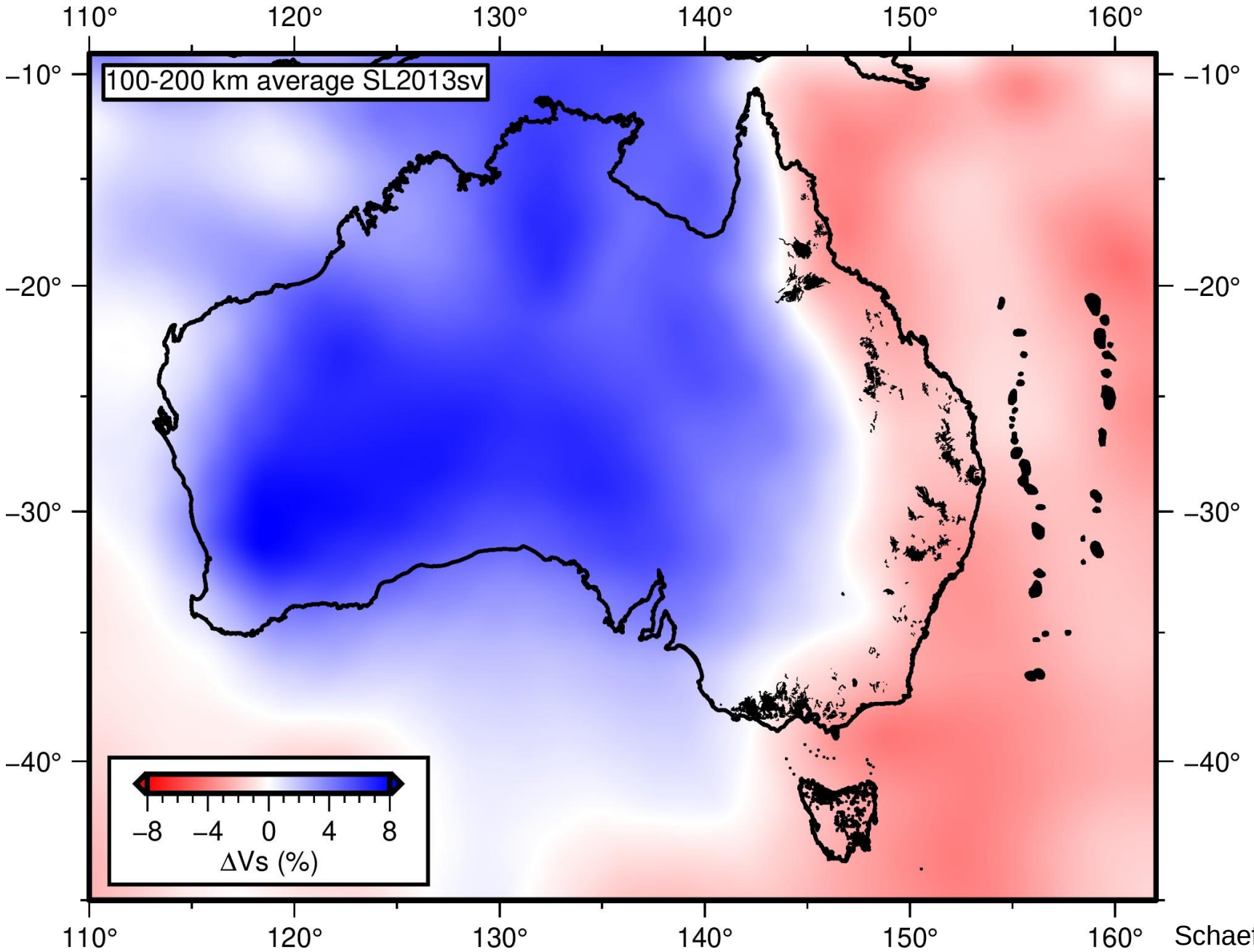
Ball et al. (2021)

The Australian Continent – Free-Air Gravity Anomaly



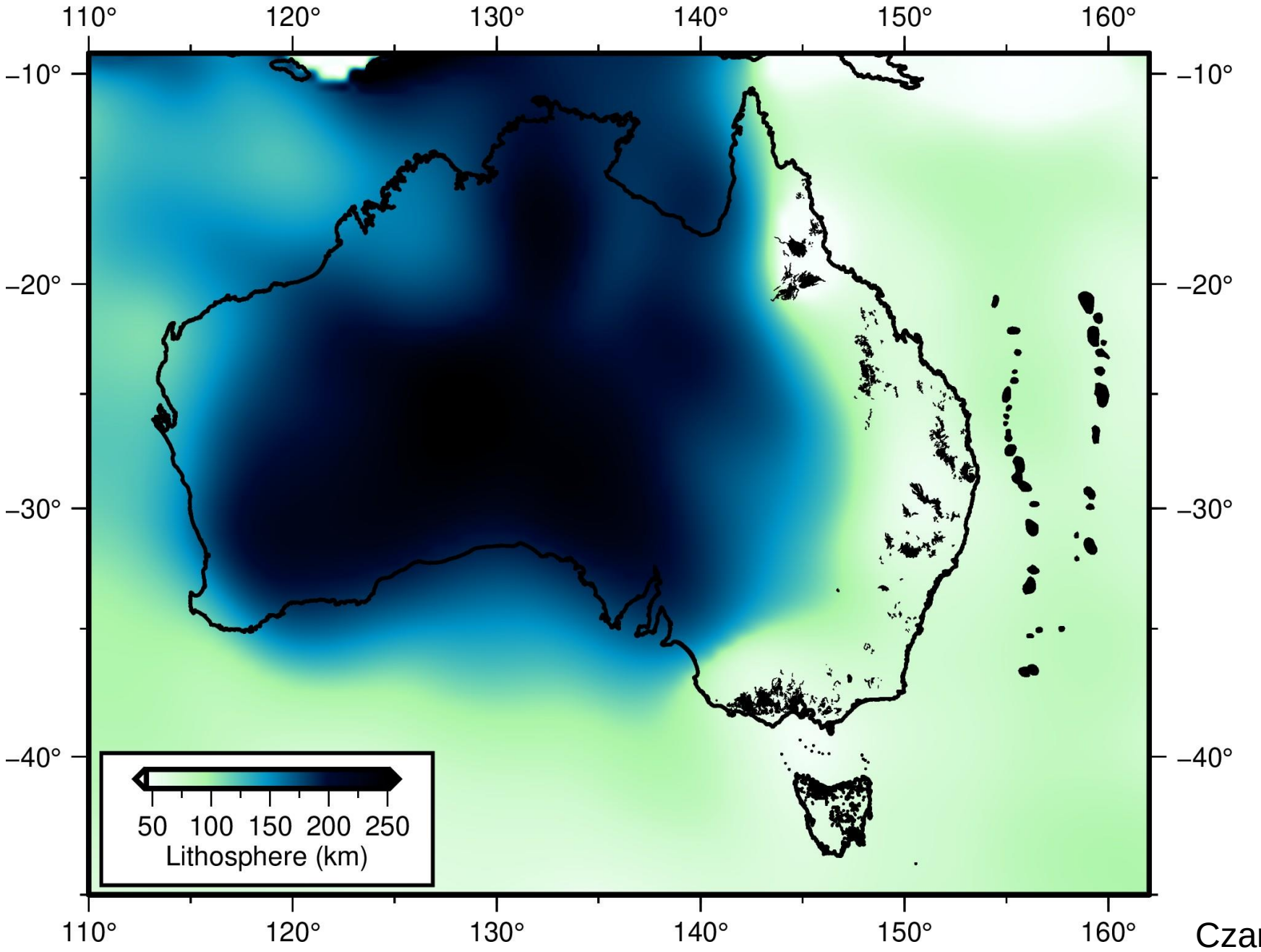
Bruinsma et al. (2014)

The Australian Continent – Tomography



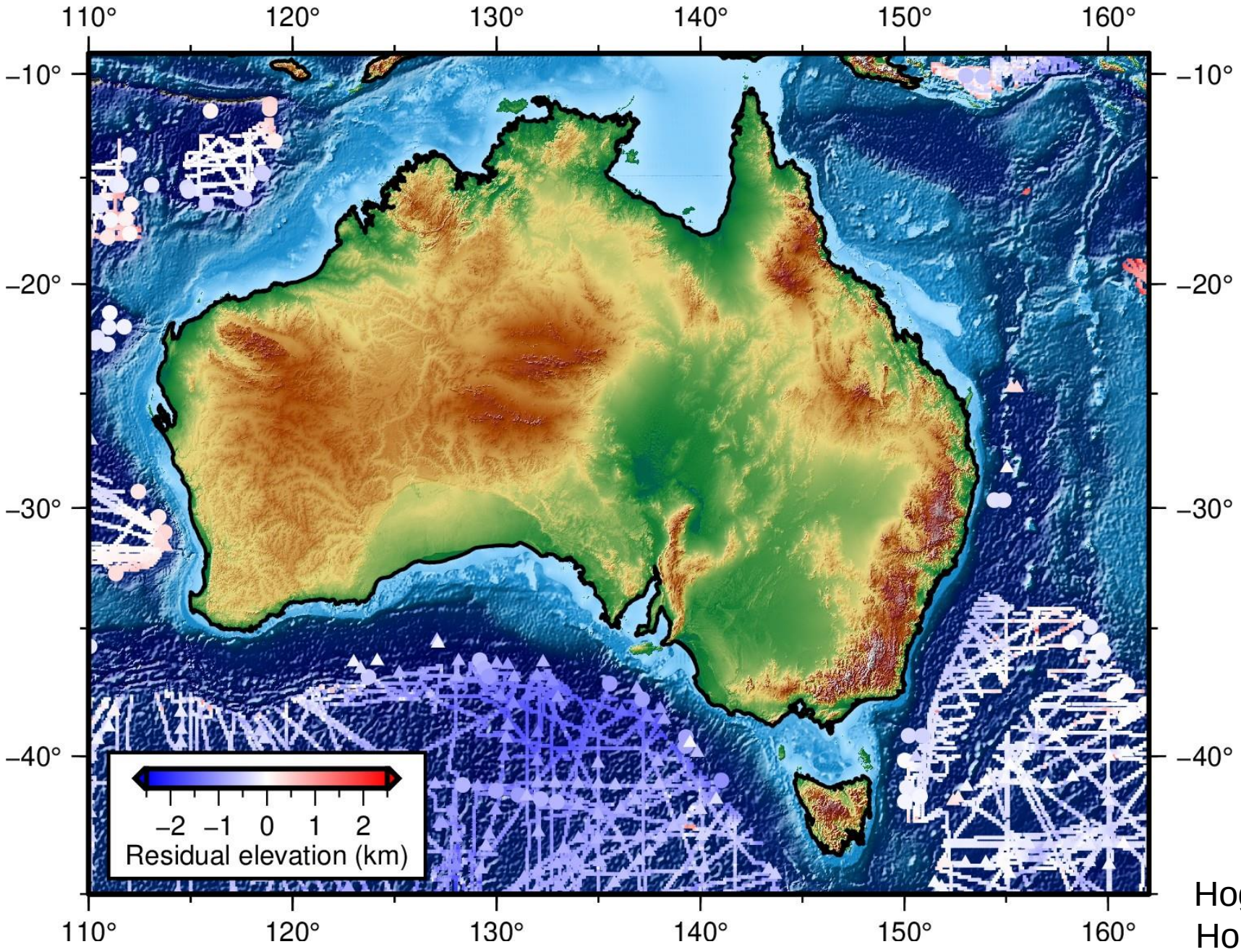
Schaeffer and Lebedev (2013)

The Australian Continent – Lithospheric Thickness



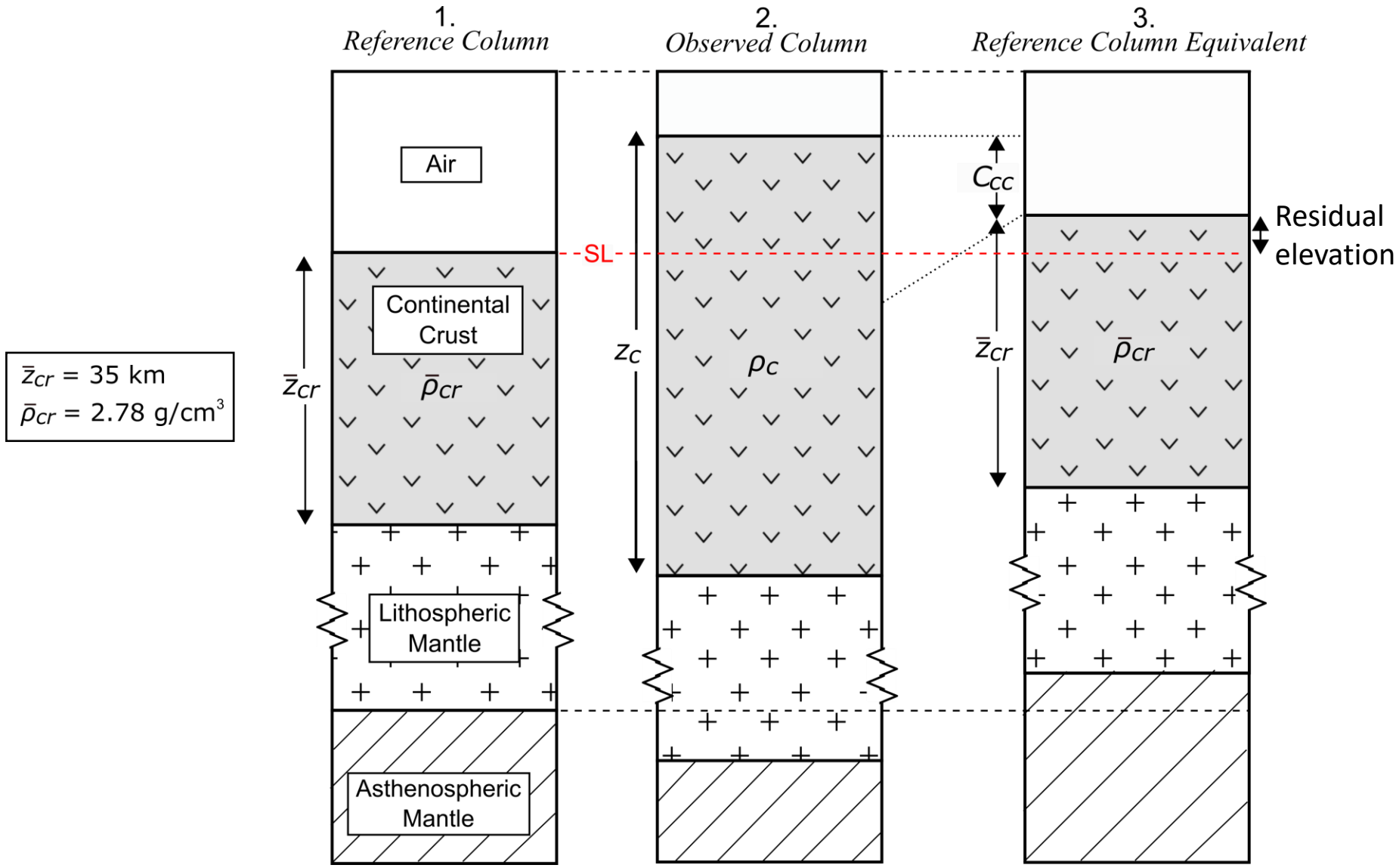
Czarnota et al. (2019)

The Australian Continent – Offshore Residual Depths



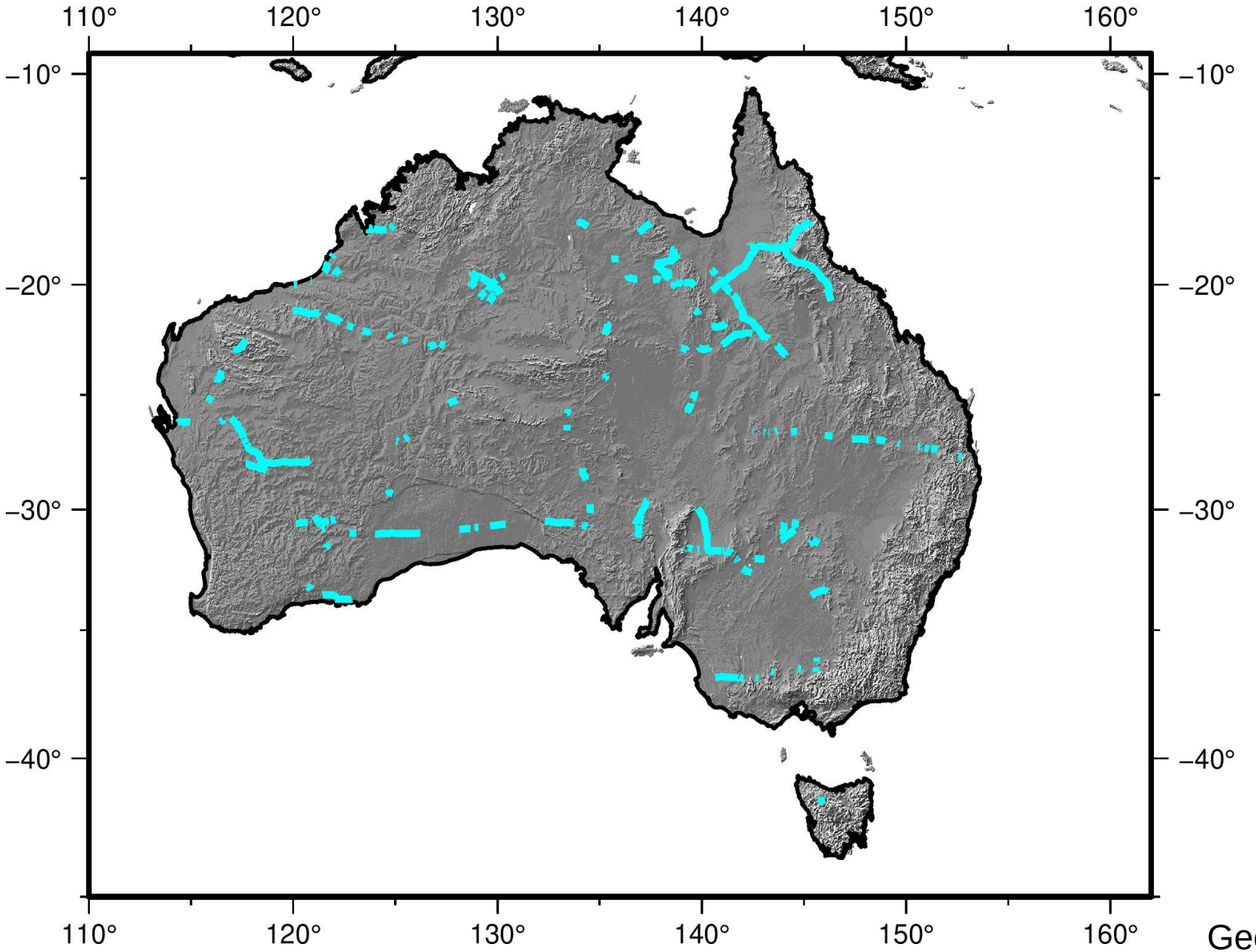
Hoggard et al. (2017);
Holdt et al. (*in review*)

Determining Residual Elevation on the Continent
Isostatic Continental Crustal Correction



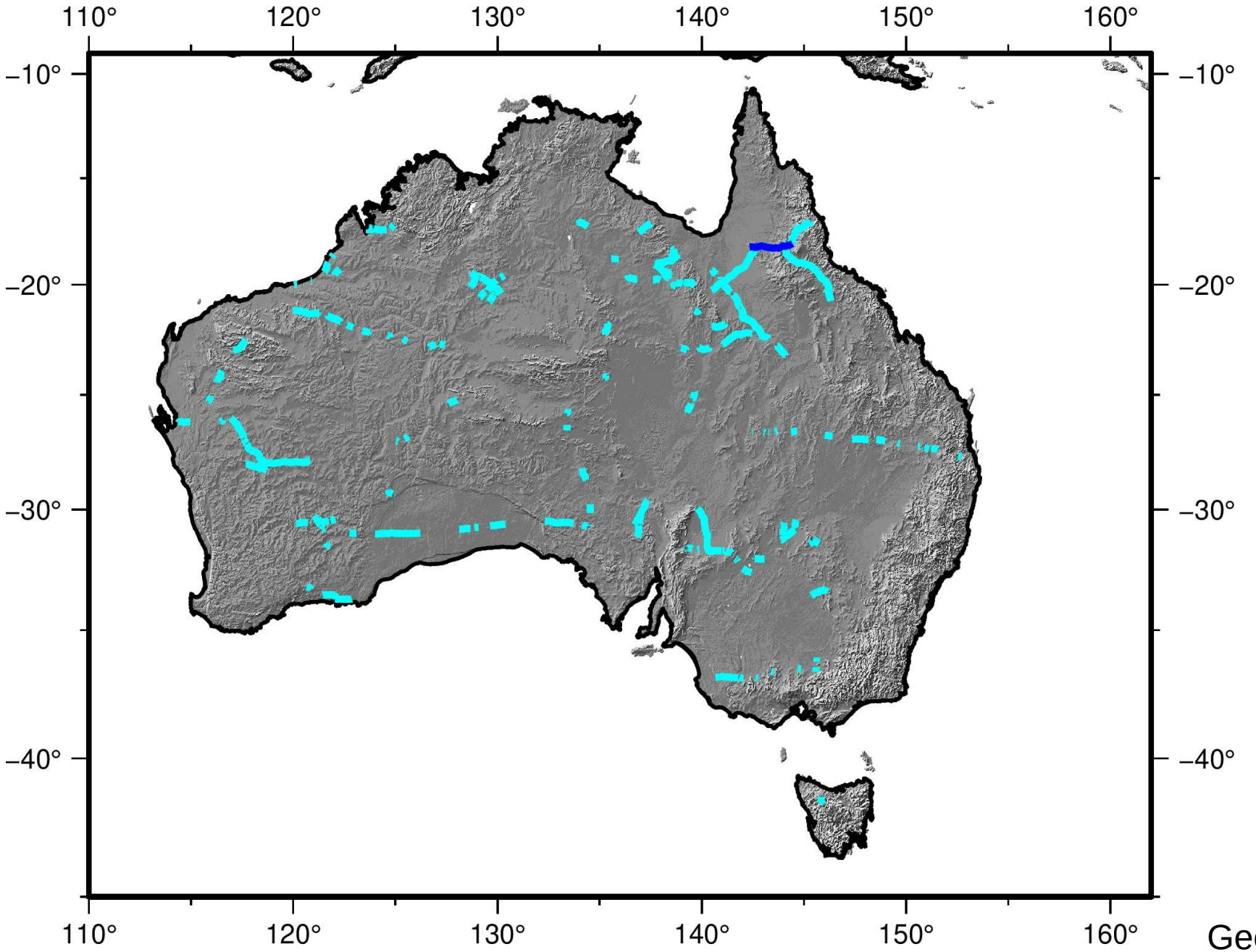
Holdt et al. (*in review*); Stephenson et al. (*in prep.*)

Constraining Crustal Thickness – Seismic Reflection Data



Geoscience Australia

Constraining Crustal Thickness – Seismic Reflection Data



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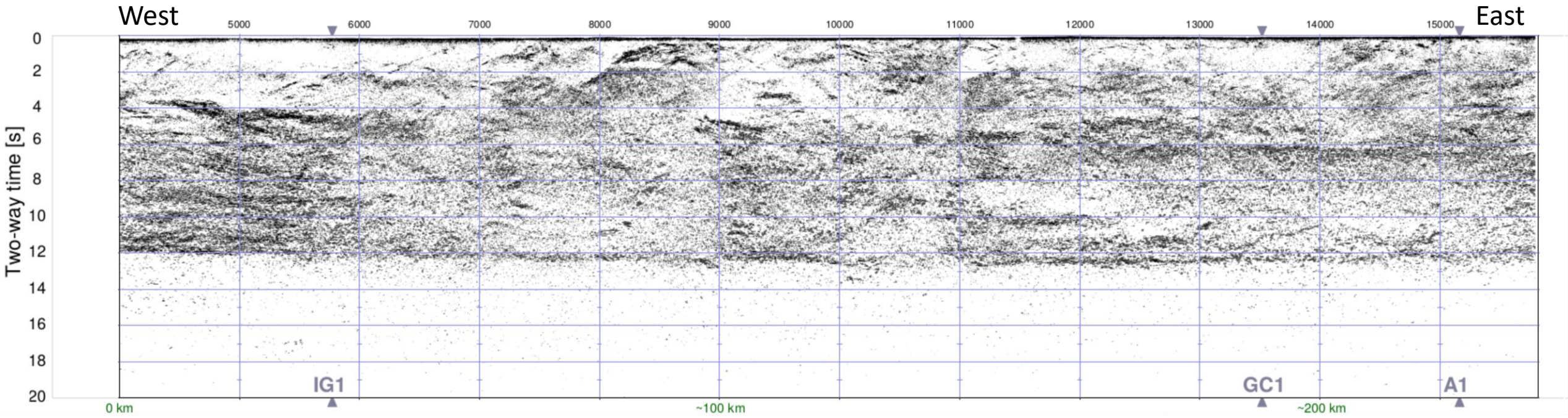
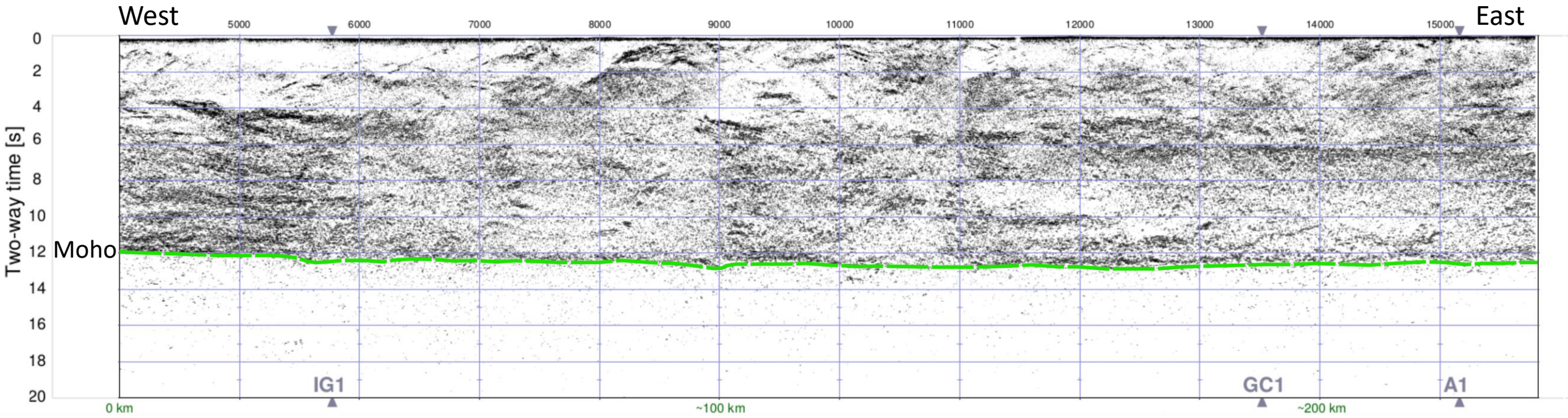
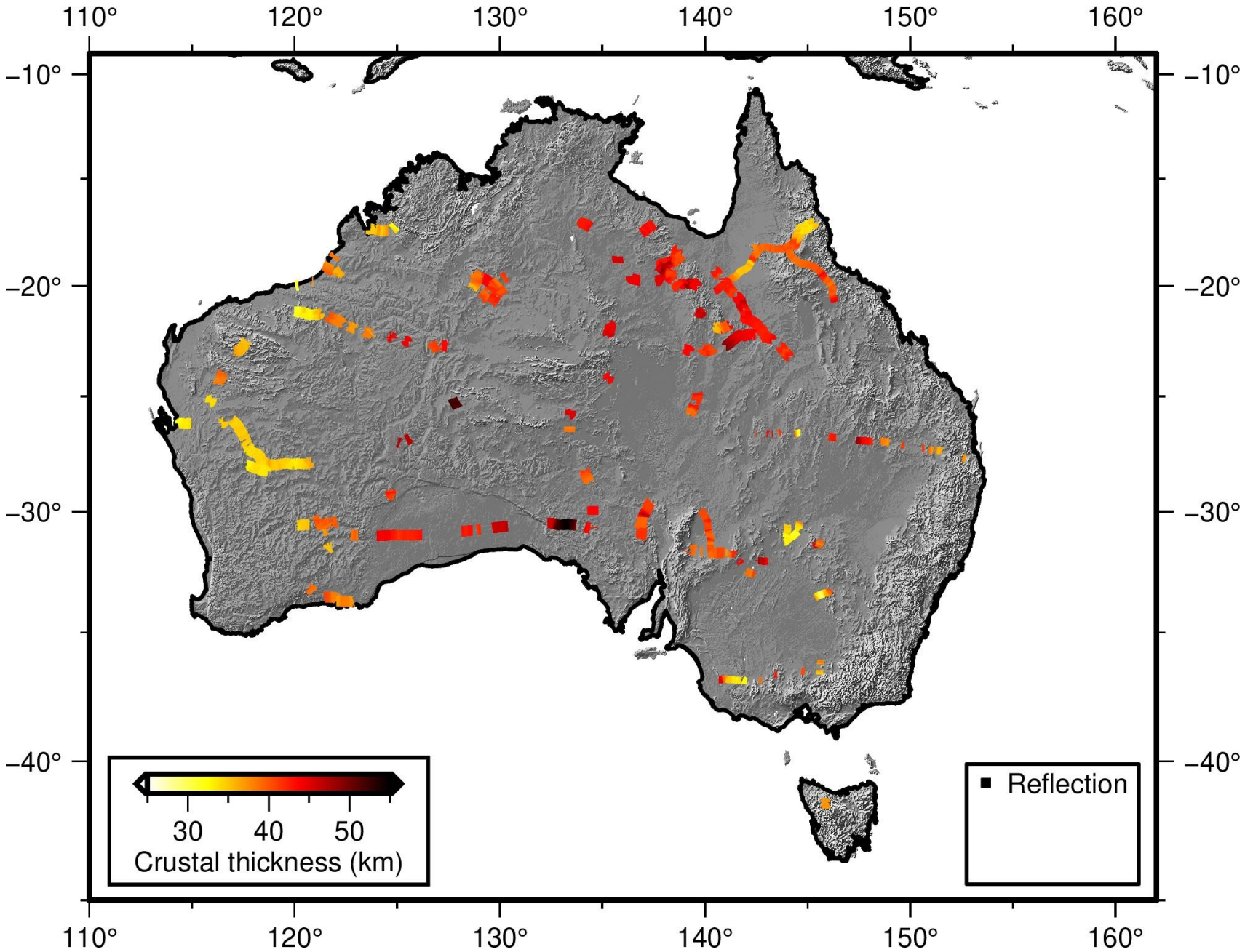


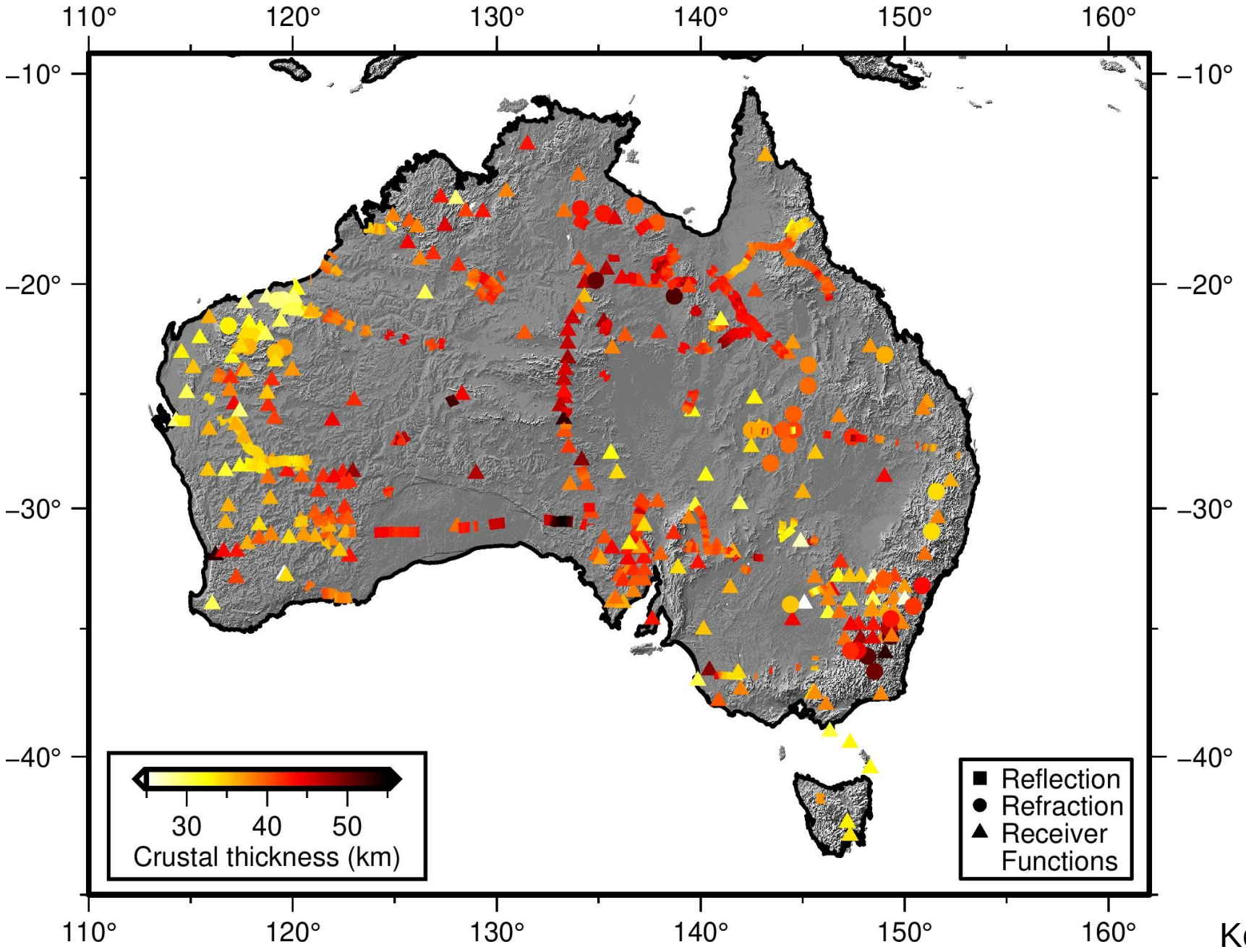
Constraining Crustal Thickness – Seismic Reflection Data



Crustal Thickness Measurements

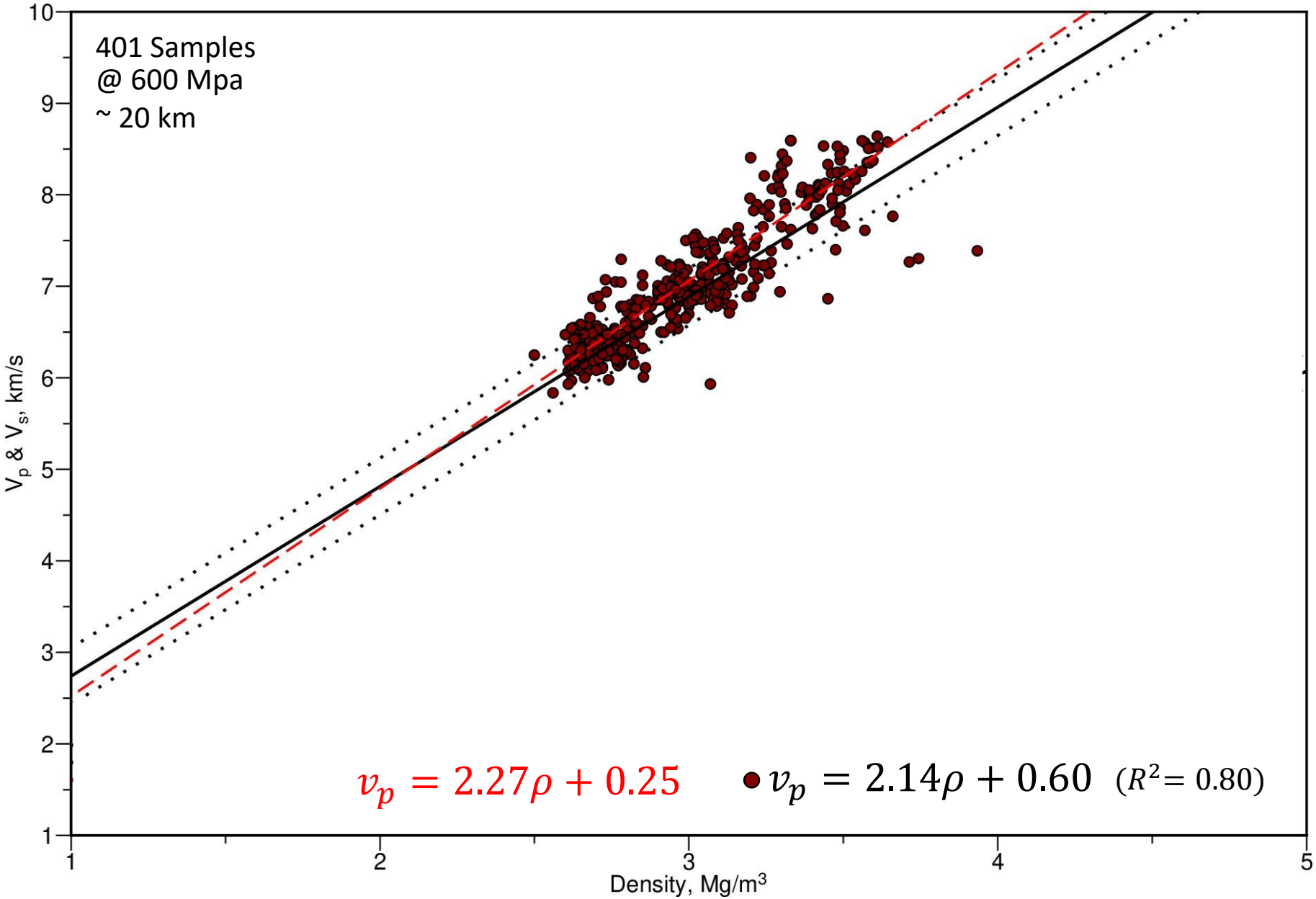


Crustal Thickness Measurements



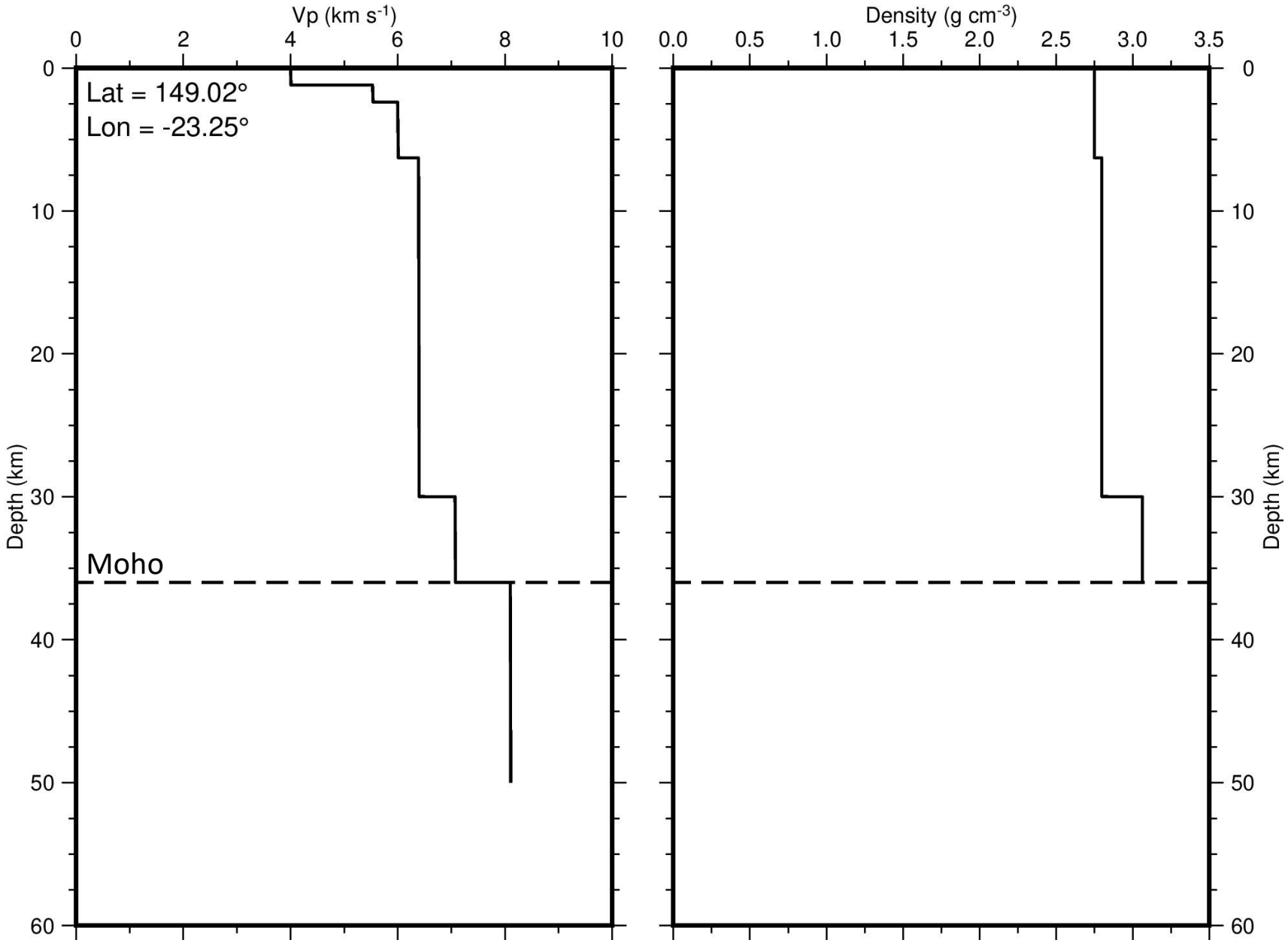
Kennett et al. (2011)

Constraining Crustal Density



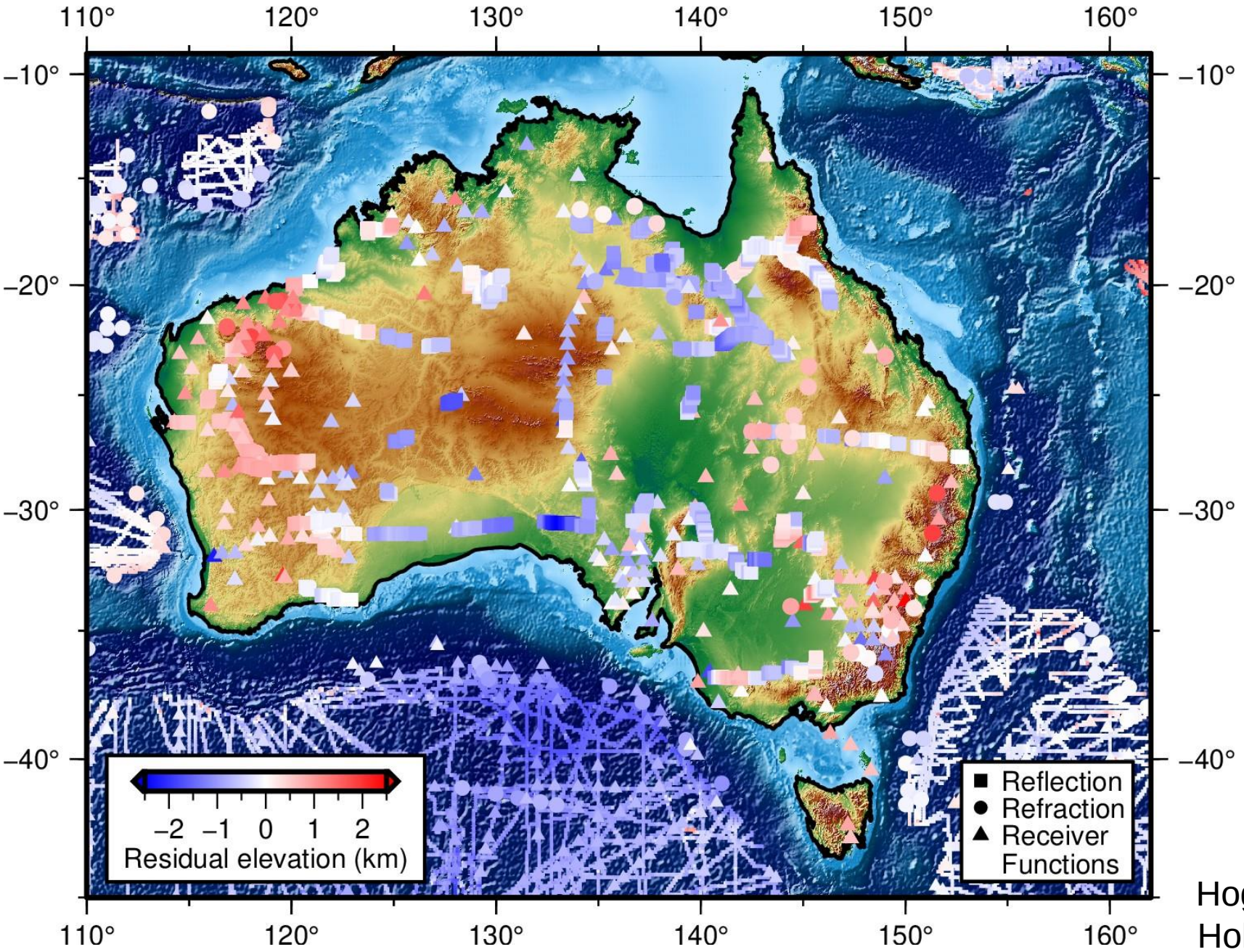
Ji et al. (2010); Stephenson et al. (*in prep.*)

Crustal Density Conversion



Stephenson et al. (*in prep.*)

Residual Elevation Results



Hoggard et al. (2017);
Holdt et al. (*in review*)

Conclusions

- Eastern seaboard is characterized by features consistent with dynamic support (elevated topography, thin lithosphere, Cenozoic magmatism).
- Seismic experiments yield residual elevation of Australia.
- Oceanic and continental dynamic topography are generally self-consistent.