



# **AuScope-AGOS: From data to knowledge**

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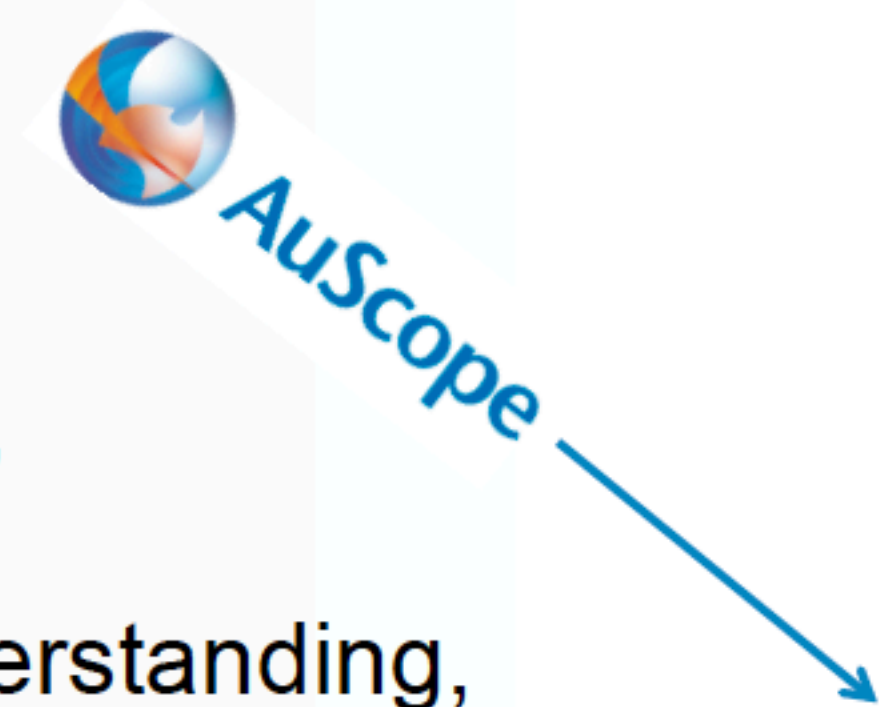
# AuScope: more than data collection, more than data access

Data is not information,

*Einstein* -> information is not knowledge,

knowledge is not understanding,

understanding is not wisdom.



*Stoll (1996)*

*After Stoll and Shubert*

# The challenge

Why Earth Imaging ?



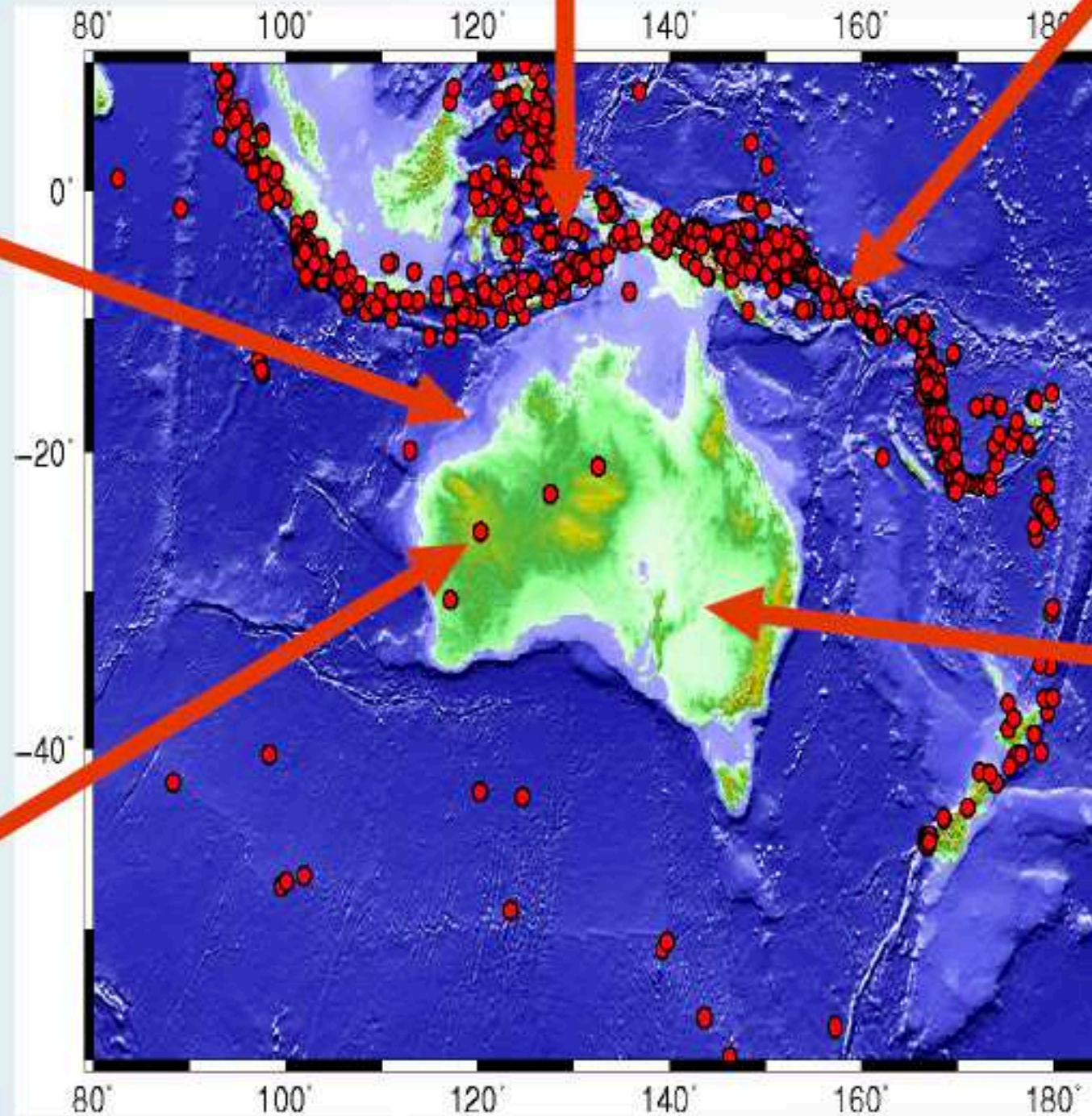
Seismic Hazard



Tsunami



Offshore



Earth Structure

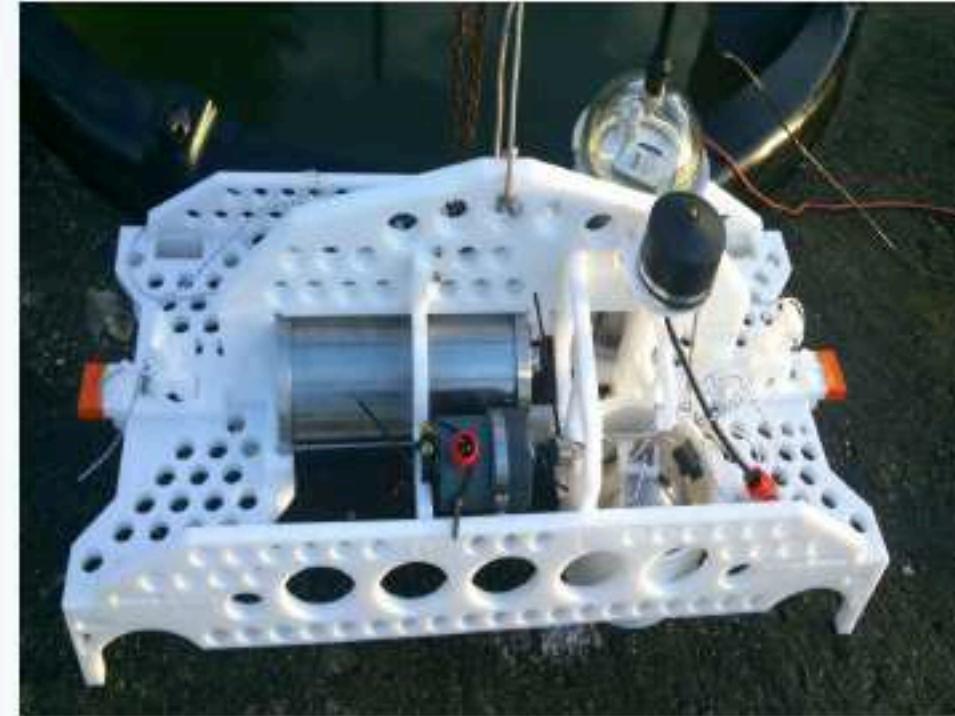


Mining

# AGOS Earth Sounding tools



200 New generation seismic recorders. Built at ANU. Highly portable and rugged.



20 Ocean Bottom Seismometers. Operational depth up to 6 km.



20 Earth Data seismic recorders. True broadband recording for detecting surface and body waves.

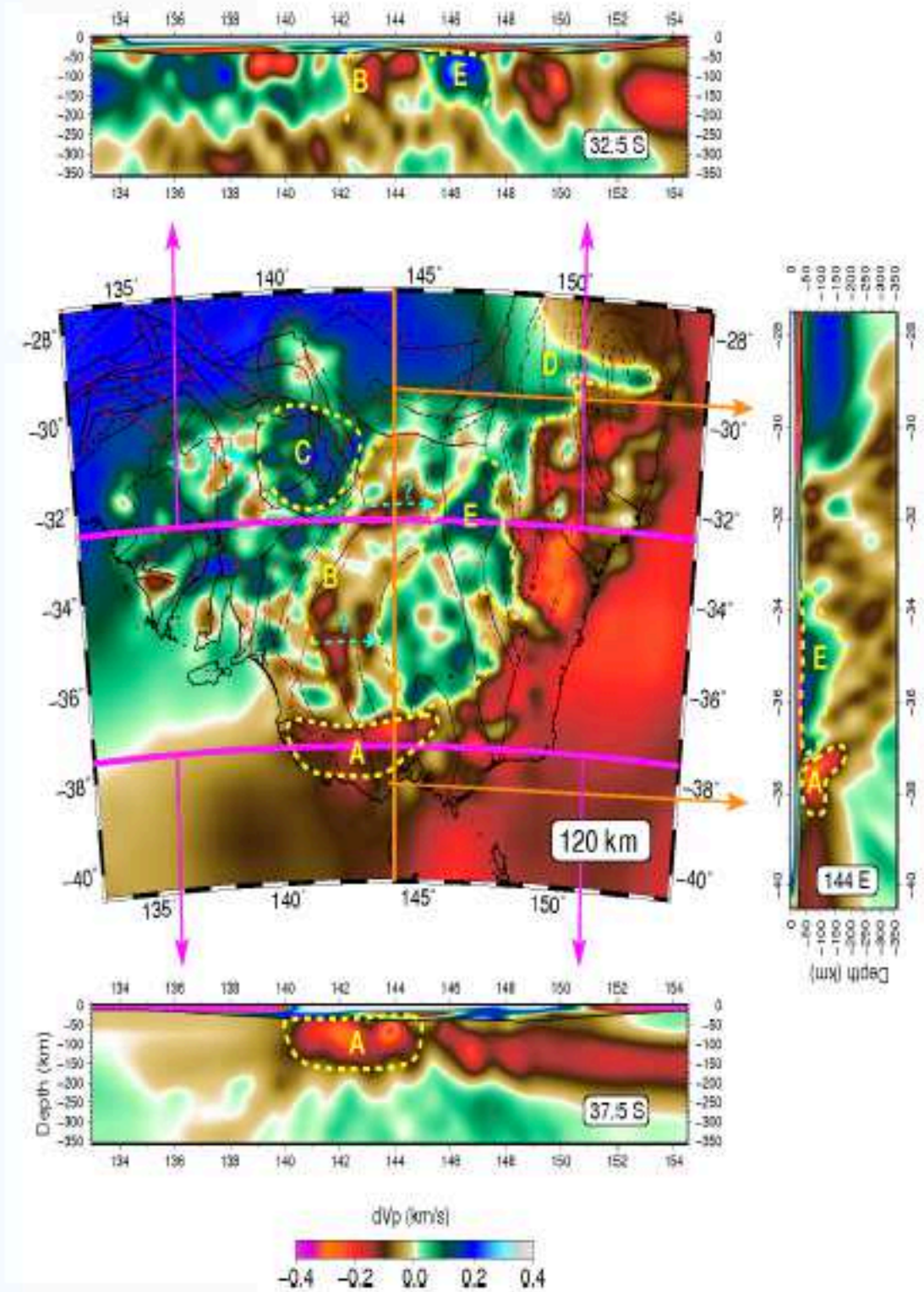
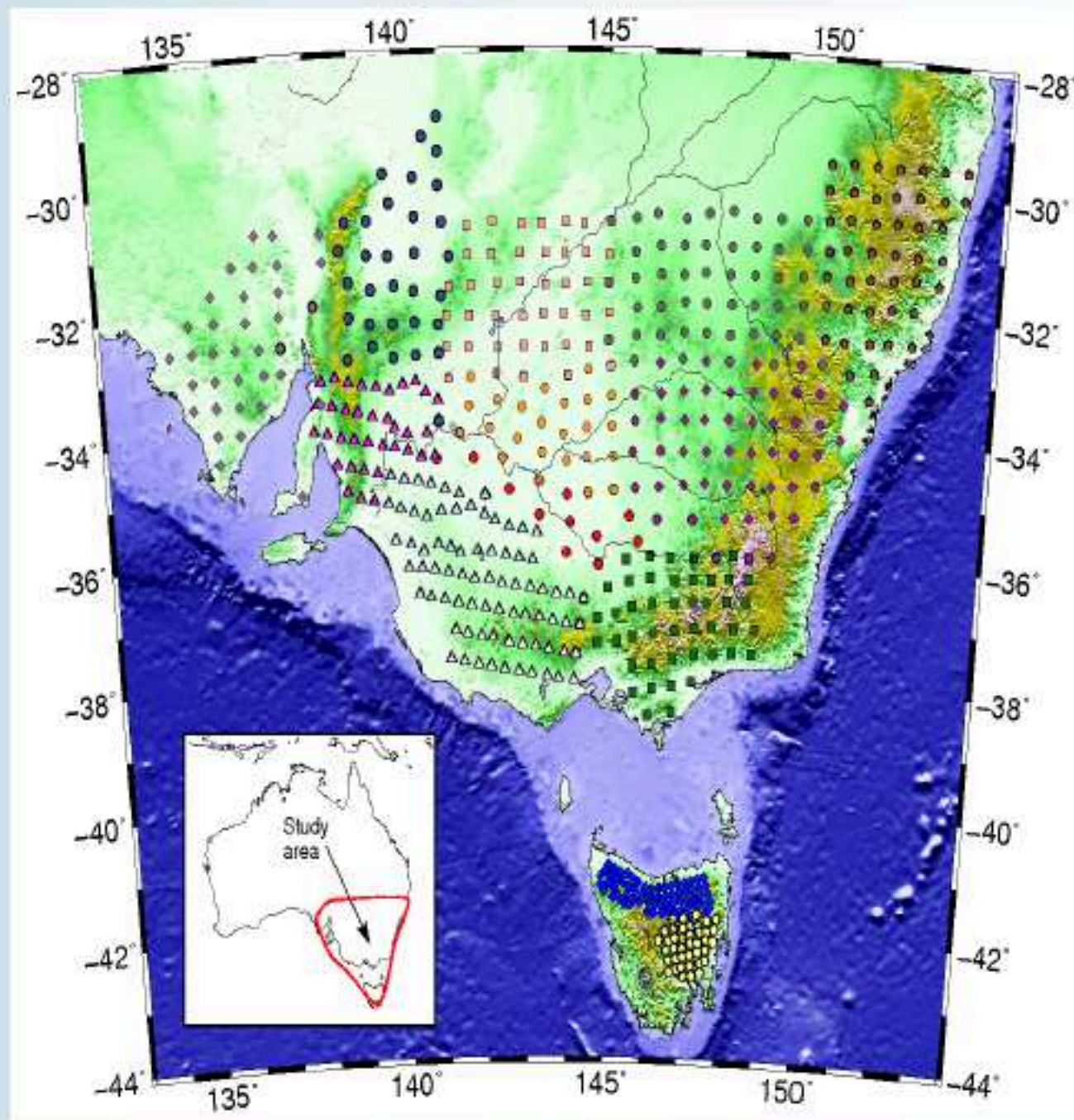


100 Electric field loggers. Built at University of Adelaide. Portable and quick to deploy.

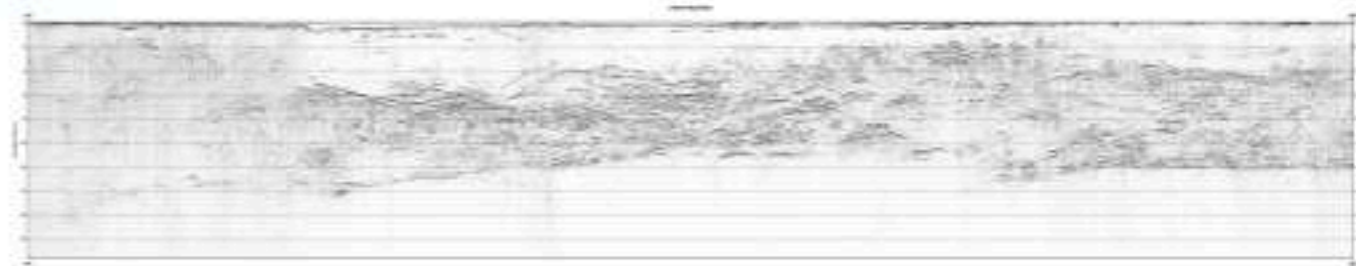
Equipment for the community: ANSIR

# The largest transportable seismic array in the Southern hemi-sphere supported through NCRIS and AGOS

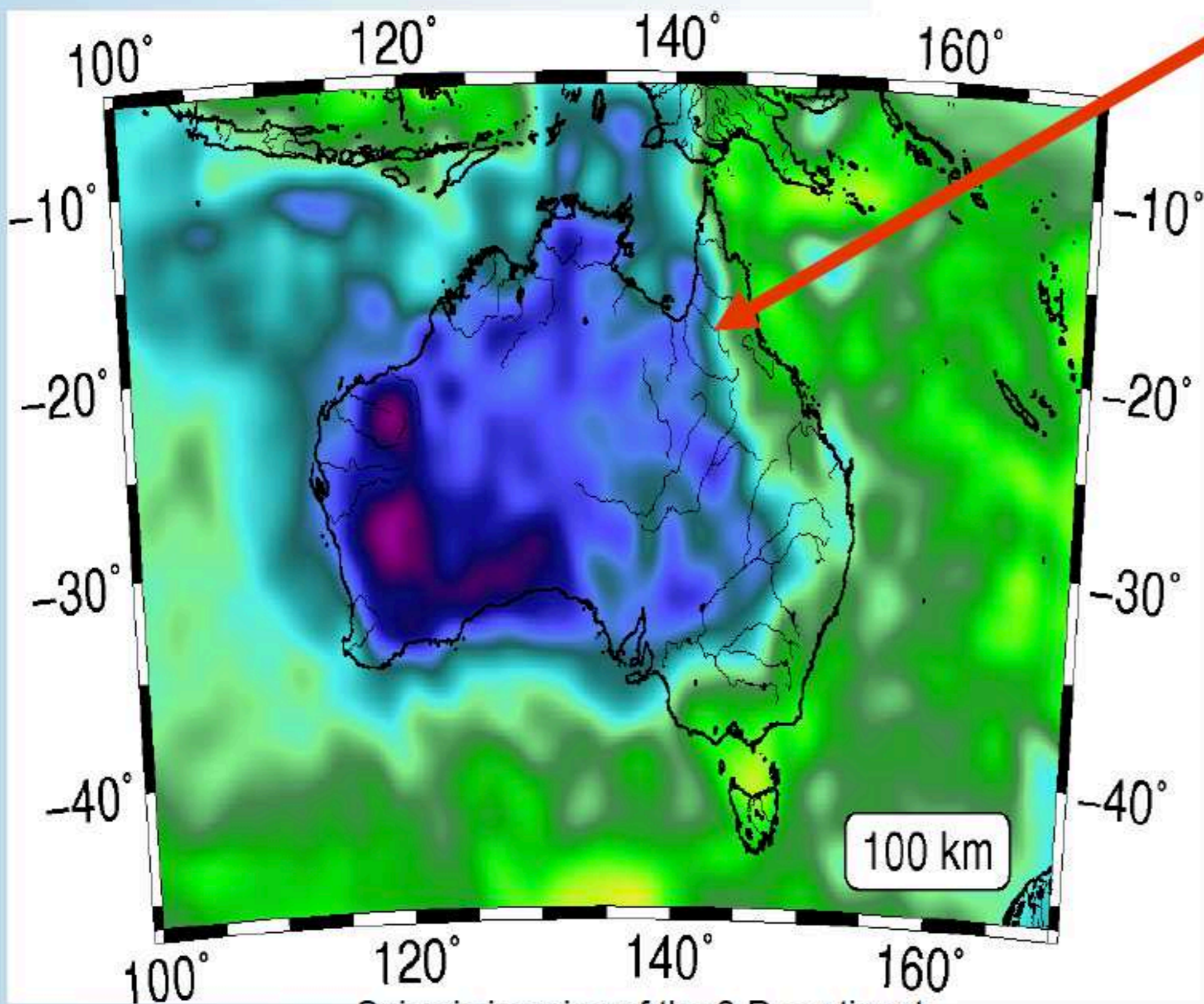
The past and the present



# Multi-scale imaging



NCRIS seismic reflection section

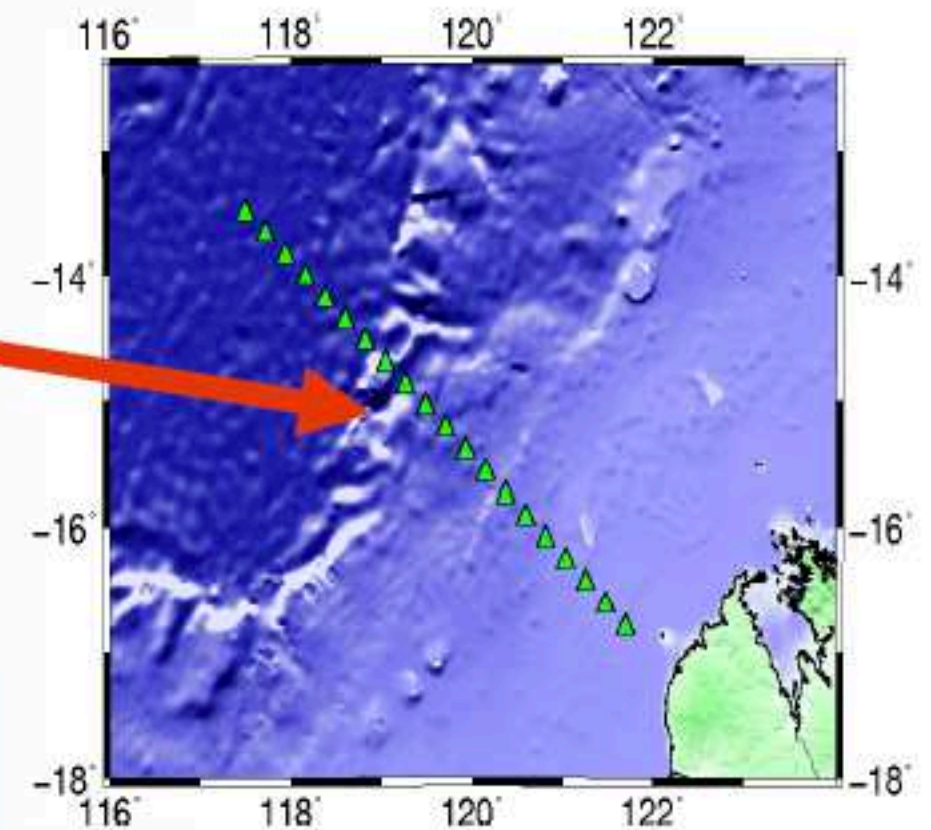
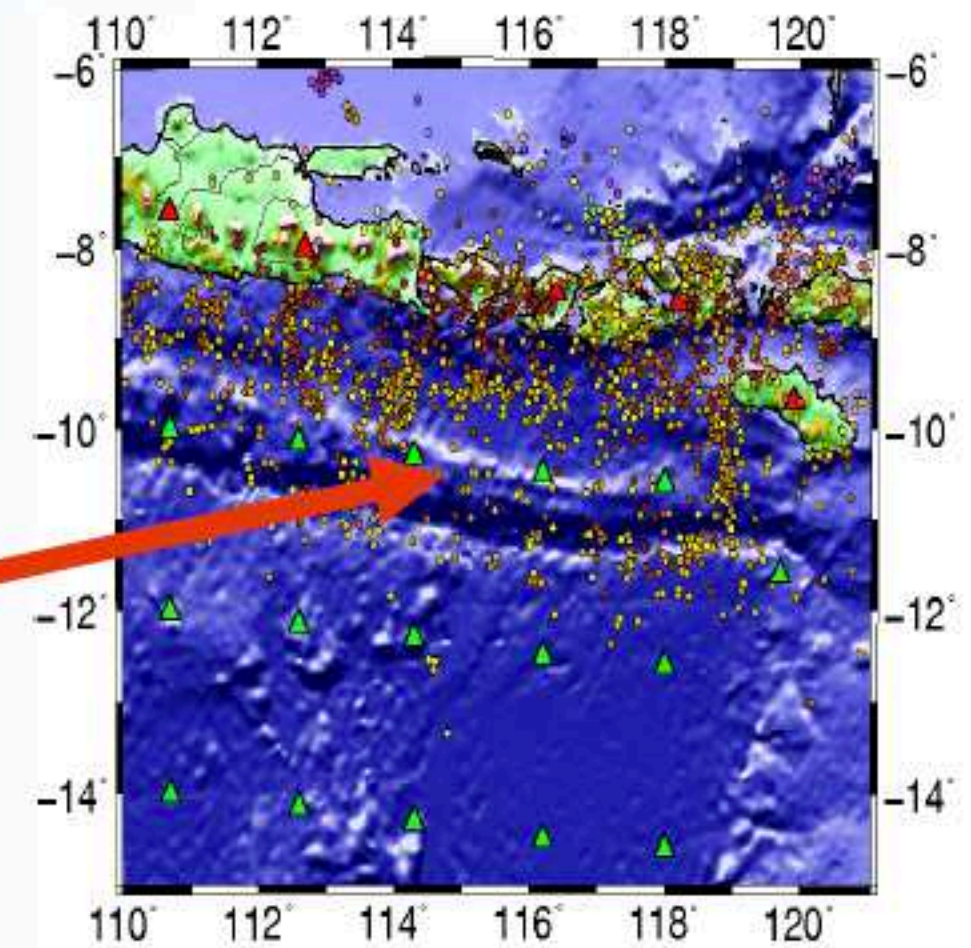
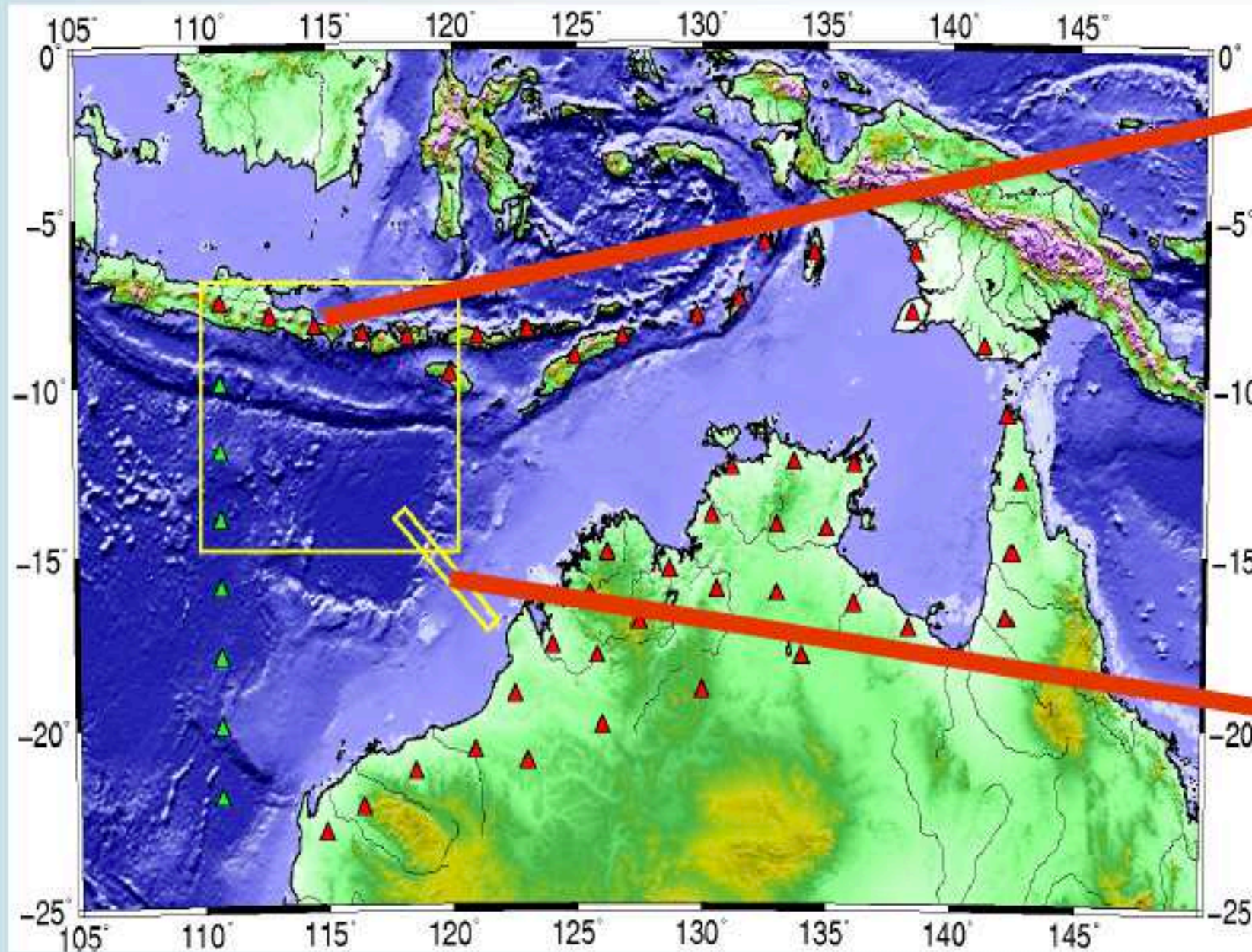


Seismic imaging of the 3-D continent

Although we can image across the scales, we have been restricted to on-shore Australia. But 30% of the Australian plate lies underwater, and we are connected to our neighbours to the north and east.....

# Dreams become reality

Look what will be possible



With new AGOS equipment we can combine onshore and offshore 3-D imaging for the first time.

*Mega thrust earthquakes, Ocean basin to continent shelf, Industrial applications; Engagement in International programs.*

# Next generation inference tools for the research community

- Getting the most out of AuScope data infrastructure



- Development of leading edge open source data inference (software) toolkits. Generic algorithms for parameter fitting, imaging, and **uncertainty estimation**.

- Integration of inversion capabilities in Escript (UQ) and distribution through community portal, *iEarth*.

