



AuScope

AN ORGANISATION FOR A NATIONAL
EARTH SCIENCE INFRASTRUCTURE PROGRAM

AuScope Earth Imaging – progress with geotransects

B.L.N. Kennett

Research School of Earth Sciences

The Australian National University

AuScope Earth Imaging

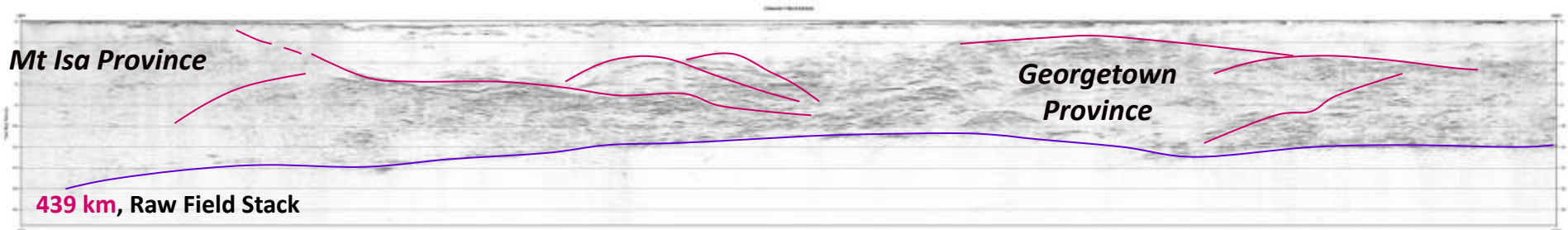
- New equipment acquisition has been made to support passive seismology and magnetotellurics
- The concept of geotransects utilising a wide range of information is central to the AuScope model, and AuScope has supported reflection seismic and other data acquisition across areas of major scientific interest
- An opportunity arose in at the beginning of AuScope in July 2007 to make an add-on to a major survey in north Queensland (GA/GSQ) so that the surface exposure of the Tasman Line was crossed in two distinct places
- This experiment demonstrated the value of joint ventures with other partners

2007 Seismic reflection surveys in Northern Queensland (~ 1800 km)

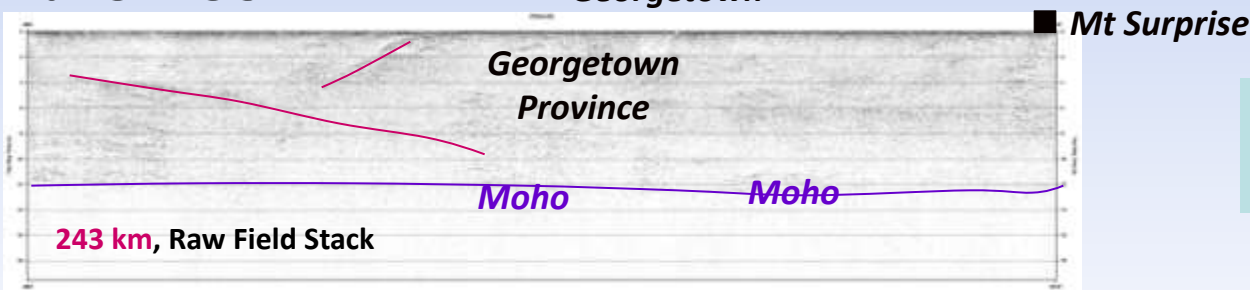


Raw Field Stacks for 2007 Isa-Georgetown-Charters Towers Seismic Reflection Traverse plus Crustal Trends

07GA-IG1

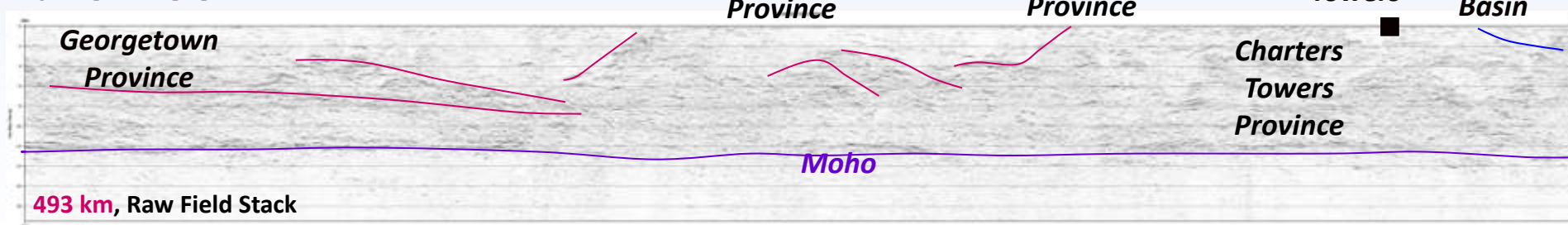


07GA-GC2



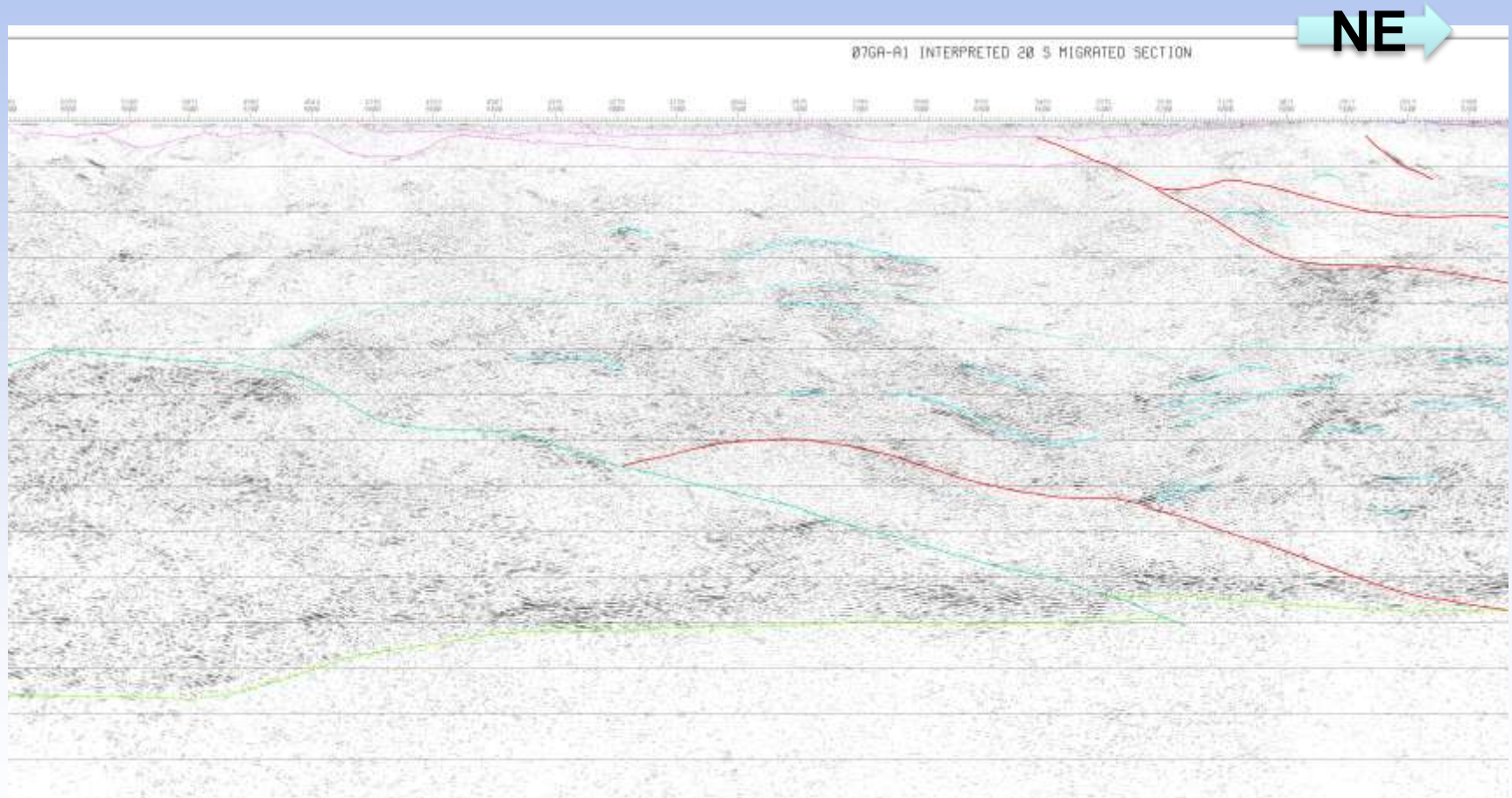
Preliminary Sections,
Preliminary Trends

07GA-GC1



AuScope: FNQ transect

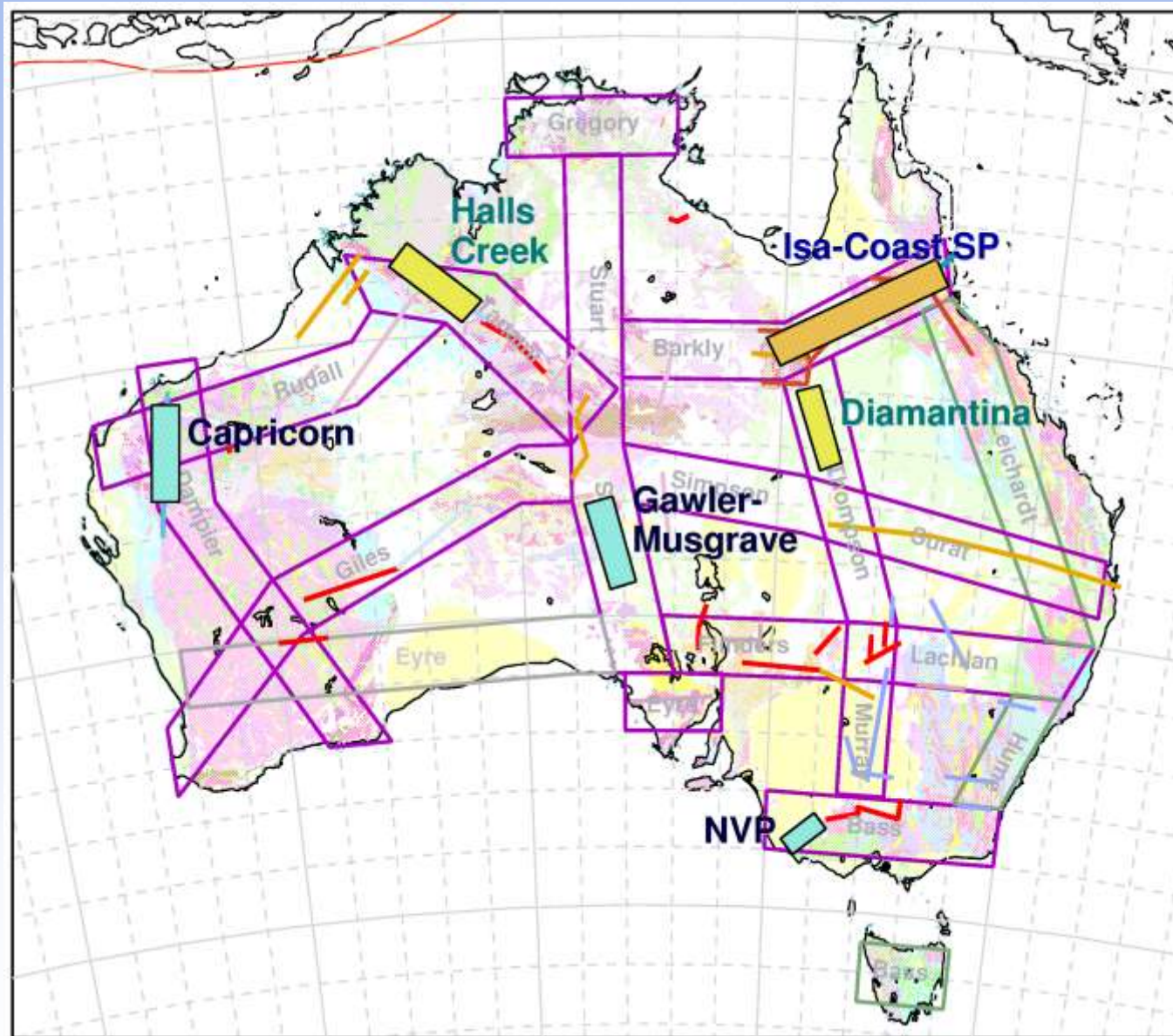
- Data and images for AuScope line are available through the Geoscience Australia WebSite



National Geotransect Program

- Through the National Committee for Earth Sciences a Working Party drew up a concept for transect corridors across the continent
- A call for proposals for transect work was made, and then following peer review
- Four areas were identified for investment of AuScope data infrastructure funds
 - ❖ 3 for reflection transects
 - ❖ 1 for supplementary passive seismic for existing reflection work
 - Two further areas of major interest were identified, but could not be addressed with available funds

AuScope Transects



Reflection

High Priority 

Medium Priority 

Passive Seismic

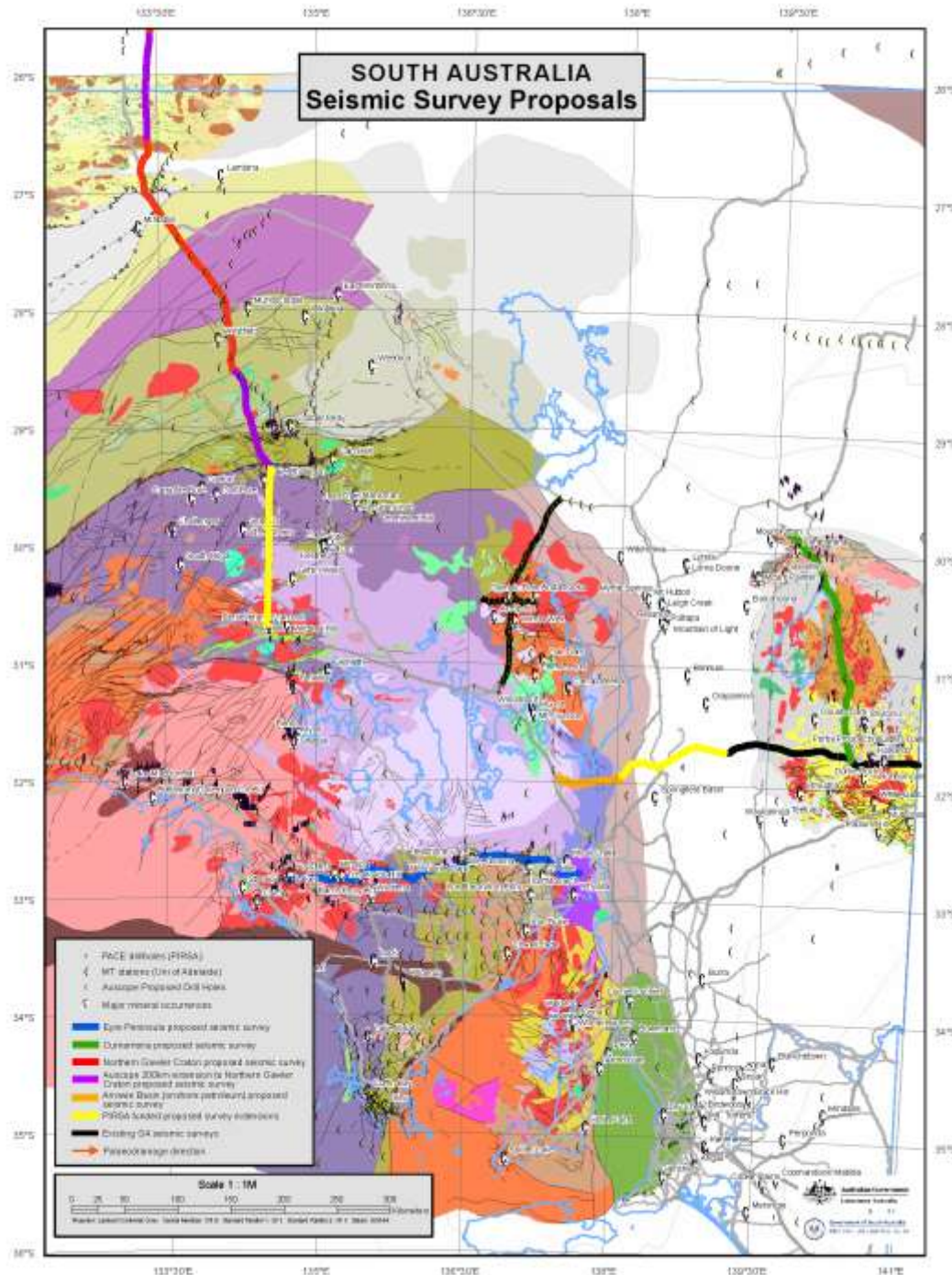


AuScope transects

- The planning was linked to the OESP program at GA and concepts from State Surveys
- Reflection work has been carried out on 3 additional lines:
 - GOMA (SA/NT) [AuScope 200 km of 580 km] : acquisition October 2008, interpretation in train
 - Delamarian (WVic/SA) [AuScope 200 km] : acquisition November 2009 processing nearly complete
 - Capricorn (WA) [AuScope 245 km of 590 km] : reflection acquisition completed in May 2010
- MT data is being acquired for each profile
- Passive seismic was added in South Australia to link to reflection work under OESP (access issues for GOMA)

GOMA

- AuScope
- GA OESP
- PIRSA



AuScope Passive Seismic

35 stations
Gawler then
Curnamona



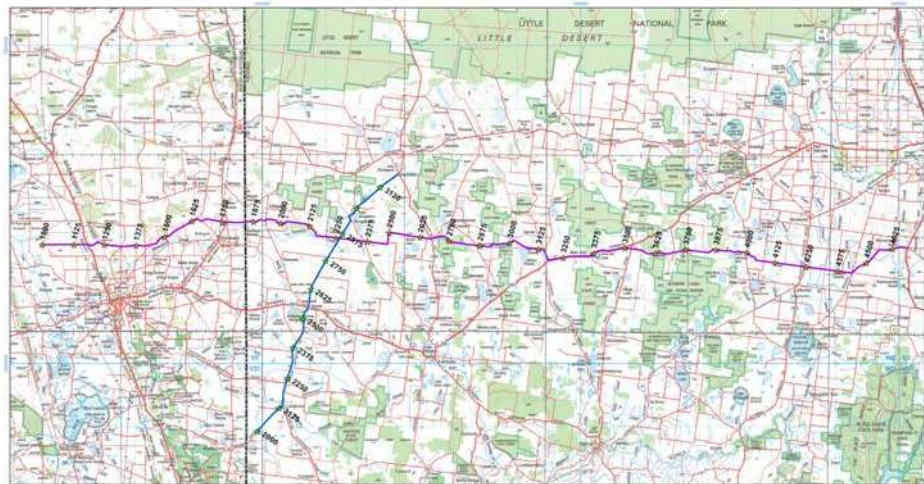
Delamarian Transect

AuScope/GSV

Completed Dec 2009 in W. Victoria and SA.

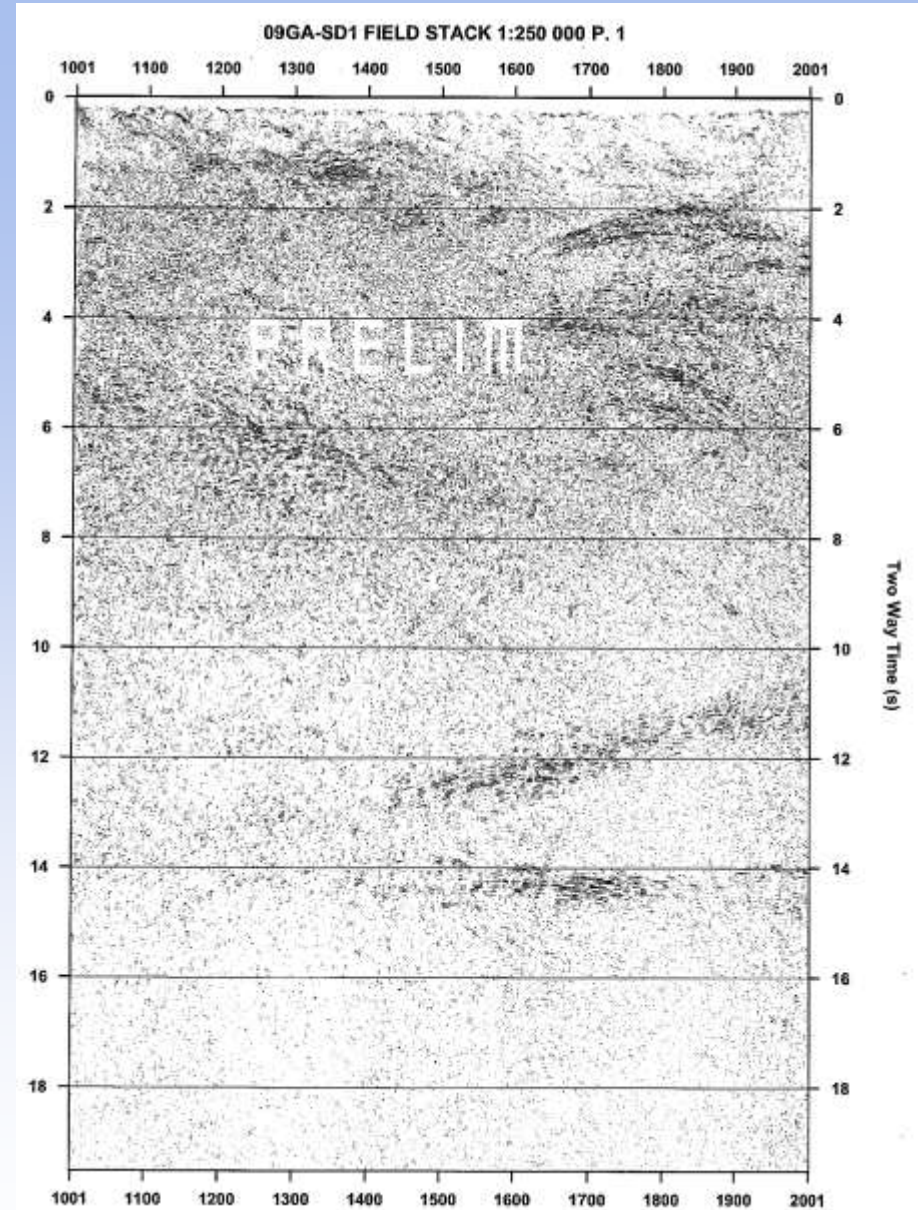
Clear patterns of crustal reflectors and thickening crust to west – with unusual reflector at 14s twt.

Interpretation commenced June 2010 at GSV



Southern Delamarian Seismic Surveys
09GA_SD1: 09GA_SD2
Western Victoria - South Eastern South Australia
1:250,000

- 09GA_SD1
- 09GA_SD2
- 09GA_SD3
- 09GA_SD4

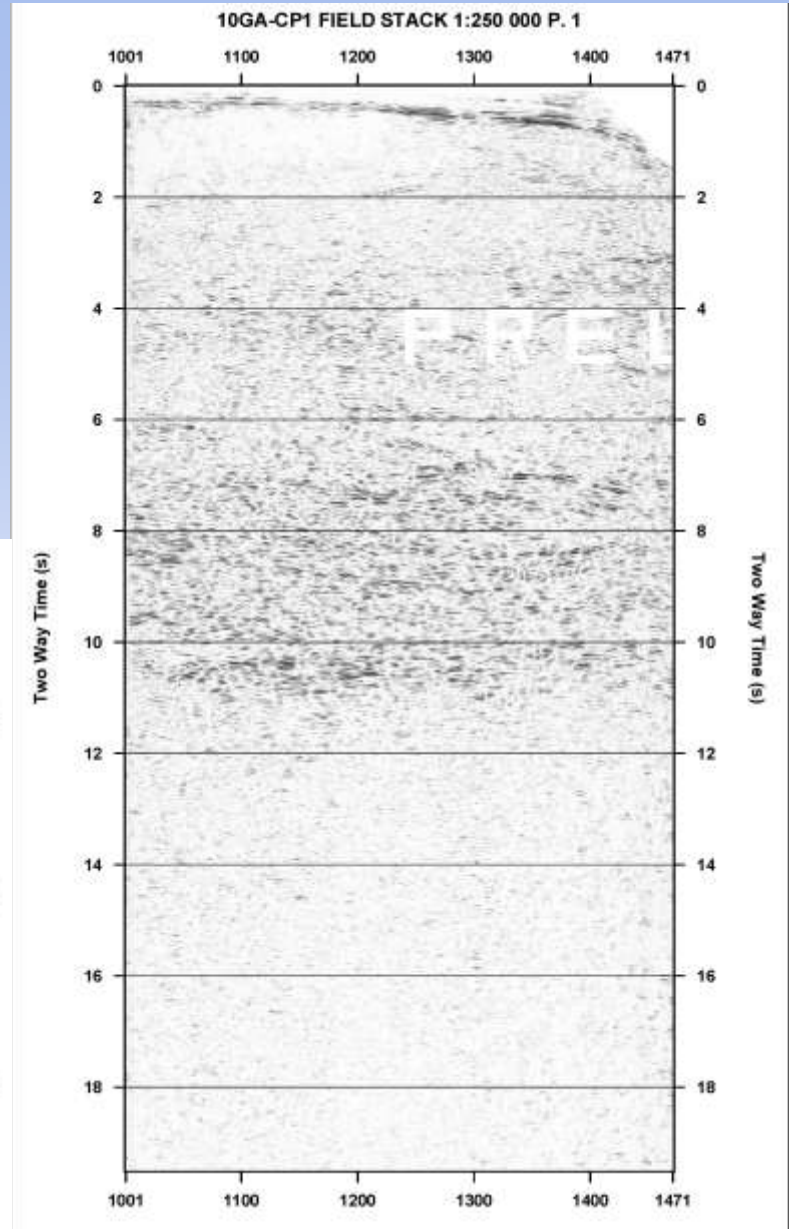
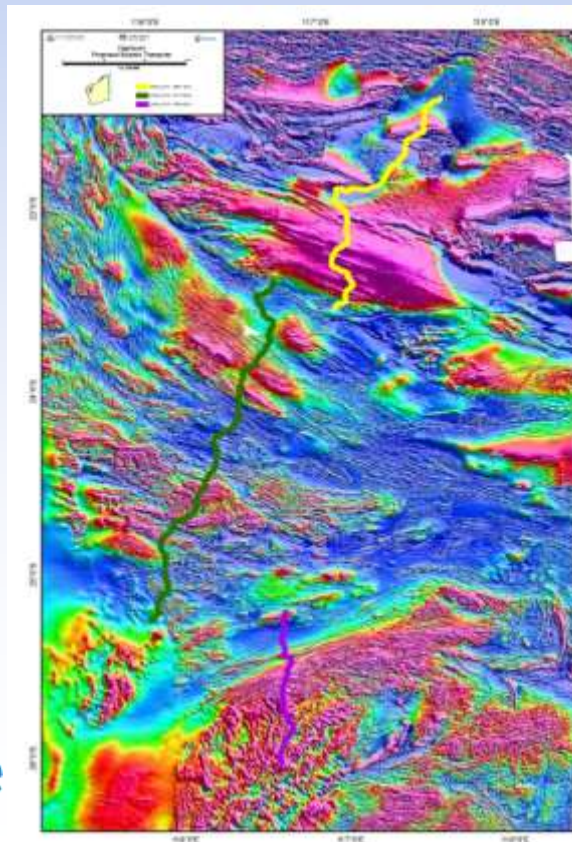


Capricorn Transect

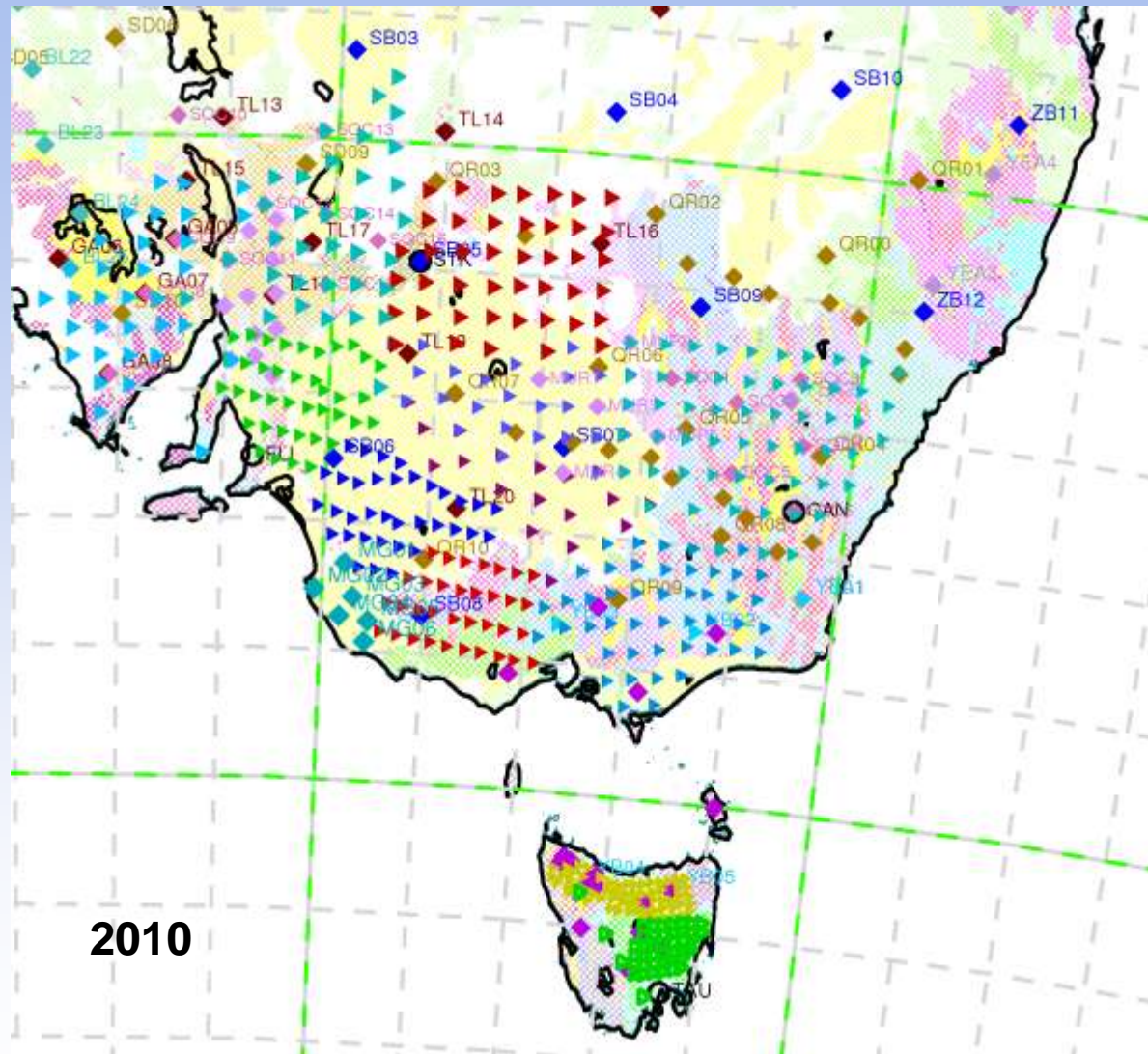
Jointly funded AuScope/GSWA

Linking from Pilbara to northern Yilgarn
across Capricorn Orogen

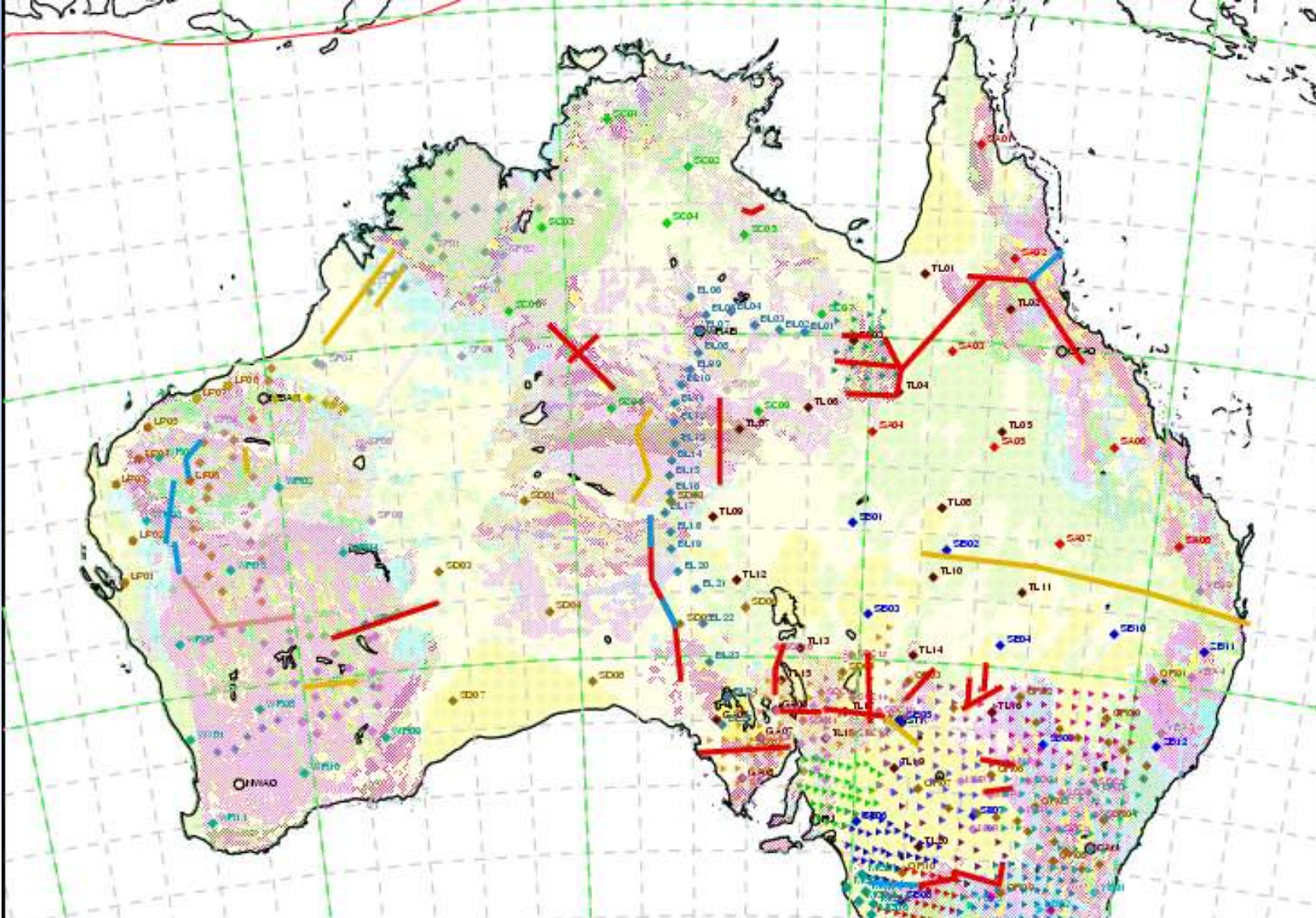
Data acquisition commenced April 18 at
northern end – clear package of lower crustal
reflectors.



Passive Seismic – SE Australia



AuScope Investment In SA extends the area with coverage of 3-D structure whilst linking directly to reflection lines (OESP/PIRSA) and ANU experiments with AuScope instrument support



Reflection and passive seismic to 2010

AuScope 2007-2011



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