

Deep Crustal Seismic Reflection Profiling: Australia 1978-2015

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Foreword

This atlas of reflection profiles penetrating the whole crust, with accompanying geological maps, represents a collaboration between the Research School of Earth Sciences at The Australian National University and Geoscience Australia. The reflection atlas project arose from work on the Australian Seismological Reference Model (AuSREM) sponsored by the National Infrastructure program of AuScope and the Australian National University.

This second edition brings the collection to 2015, with 4,000 km of additional reflection profiles compared with the first version. In all the profiles cover more than 16,000 km of coverage across the Australian continent and provide an insight into the variations in crustal architecture in the varied geological domains. A number of the recent profiles provide coverage in areas that have not been previously studied such as the Nullarbor Plain and the region to the south of Mount Isa.

Each reflection profile is presented at approximately true scale with up to 220 km of profile per page and overlap between pages, with a geological strip map and line configuration. The profiles are organised by region. The material prepared for the first edition for the period 1978-2011 is presented in the same form as before in Part I. The more recent profiles from 2012-2015 are included in Part II with the same mode of display.

In addition in Part III, groups of major reflection profiles have been assembled into continuous transects of 1000 km, or more, that link across major geological provinces and provide an insight into the structure and evolution of the Australian continent.

The set of digital data that is represented in these pages is progressively being made available from the Geoscience Australia website from:

<http://www.ga.gov.au/about/projects/minerals/current/seismic>

The data are organised by project with the reference numbers as included on the seismic sections (see Appendix B for Geocat reference numbers).

For continuity with the first edition the geological mapping has been derived from the *Surface Geology of Australia data package 2010 edition* prepared by Geoscience Australia.

The reflection results are keyed to relevant reports mostly from Geoscience Australia resources, obtainable from:

<http://www.ga.gov.au/products-services/legacy-publications.html>

There is also a chronological bibliography for published papers.

The authors would like to thank all the past and present members of the seismic reflection processing group at Geoscience Australia for their efforts in rendering the seismic data into well-balanced sections.

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