

Regional Inkamulla-aged (ca. 1740–  
1755 Ma) tectonism along strike of  
the Mt Hay-Redbank Hill region,  
southern Aileron Province, central  
Australia

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**TITLE**

Regional Inkamulla-aged (ca. 1740–1755 Ma) tectonism along strike of the Mt Hay-Redbank Hill region, southern Aileron Province, central Australia

**RUNNING TITLE**

Inkamulla-aged tectonism, Aileron Province

**ABSTRACT**

LA-ICP-MS U-Pb monazite and zircon geochronology from granulite facies metapelites and granites indicate Inkamulla-aged metamorphism has occurred in the southern Aileron province, immediately east of the Mt Hay and Mt Chapple massifs. Gneissic metasediments and a granitic gneiss from an EW-striking structural belt in the southern Aileron Province yield ages reflective of the Inkamulla Igneous Event (1754-1741 Ma) and the Chewings Event (1593-1545 Ma), along with magmatic ages of 1627 and 1641 Ma. The Chewings age is interpreted to represent structural reworking associated with discrete shear zones along the northern margin of the EW belt. Magmatic ages of ca. 1640 Ma typically associated with Warumpi Province magmatism and deformation are found within the study area, which weakens the argument that the Warumpi terrane is exotic from the Aileron Province. The metamorphic conditions of 780-920°C and 5-10 kbars indicate an elevated geothermal gradient.

**KEYWORDS**

Arunta, Aileron Province, U-Pb geochronology, monazite, reworking, migmatite, Proterozoic Australia, Inkamulla, Chewings

## TABLE OF CONTENTS

Title.....	1
Running title .....	1
Abstract.....	1
Keywords.....	1
List of Figures and Tables .....	4
Introduction .....	5
Geological Setting .....	6
Regional Setting .....	6
Study Area .....	11
Metamorphic petrology .....	12
Outcrop style.....	12
Petrography.....	13
Adla granulite metapelites (samples RBN-11, 12, 26, 28, 31).....	13
Unnamed granite (sample RBN-34).....	14
Adla granulite pegmatites (RBN-45, 46).....	14
Adla granulite leucosome (RBN-47).....	15
Methods .....	15
Bulk rock and mineral chemistry.....	15
Mineral Equilibria Modelling.....	16
Geochronology .....	17
U-Pb Monazite LA-ICP-MS geochronology .....	17
U-Pb Zircon LA-ICP-MS geochronology.....	18
Results .....	19
Geochronology .....	19
U-Pb Monazite LA-ICP-MS geochronology .....	19
Sample RBN-11.....	20
Sample RBN-12.....	20
Sample RBN-26.....	20
Sample RBN-28.....	23
Sample RBN-31.....	23
Sample RBN-45.....	23
Sample RBN-46.....	24
Sample RBN-47.....	24
U-Pb Zircon LA-ICP-MS geochronology.....	24
Sample RBN-34.....	25

Sample RBN-45.....	25
Pressure-Temperature conditions .....	26
Mineral Chemistry.....	28
RBN-12.....	28
RBN-28.....	28
Discussion.....	31
U-Pb geochronology data .....	31
Age of the outcrop- and larger-scale fabrics in study area .....	35
Regional Implications.....	40
Conclusions .....	45
Acknowledgments .....	45
References .....	46
Appendix A: U-Pb Monazite Geochronology .....	50
Appendix B: U-Pb Zircon Geochronology.....	50
Appendix C: Whole Rock Geochemistry .....	50
Appendix D: Monazite and Zircon Morphology.....	50
Appendix E: Mineral Chemistry.....	50

## LIST OF FIGURES AND TABLES

<b>Table 1:</b> Summary of deformational events to have affected the Arunta Complex.....	9
<b>Table 2:</b> Summary of sample locations, rock type and analysis conducted.....	12
<b>Table 3:</b> Summary of U-Pb monazite and zircon geochronology results obtained from this study.....	31
<b>Table 4:</b> Aileron Province tectonic events.....	36
<b>Figure 1:</b> Simplified regional map highlighting the study area.....	6
<b>Figure 2:</b> Location map overlain with a TMI geophysical image of the study area.....	10
<b>Figure 3:</b> Photomicrographs of key petrological relationships within the samples.....	14
<b>Figure 4:</b> Monazite geochronology concordia plots and representative BSE images of samples RBN-11, 12, 26, and 28.....	21
<b>Figure 5:</b> Monazite geochronology concordia plots and representative BSE images of samples RBN-31, 45, 46, and 47.....	22
<b>Figure 6:</b> Zircon geochronology concordia plots and representative CL images of samples RBN-34 and 45.....	25
<b>Figure 7:</b> Calculated <i>P-T</i> pseudosection of sample RBN-11.....	27
<b>Figure 8:</b> Microprobe-derived X-ray elemental maps (Fe, Ca, Mg, Mn) of garnet, sample RBN-12.....	29
<b>Figure 9:</b> Microprobe-derived X-ray elemental maps (Fe, Ca, Mg, Mn) of garnet, sample RBN-28.....	30
<b>Figure 10:</b> Geological map of the southern Aileron Province and Warumpi Province, showing sample locations from this study and corresponding studies.....	37
<b>Figure 11:</b> TMI aeromagnetic map of the southern Aileron province and Warumpi province, showing sample locations and geochronological results from this study and corresponding studies.....	38