

National Argon Map: an AuScope Initiative

$^{40}\text{Ar}/^{39}\text{Ar}$ Geochronology Laboratory Sample Submission Form

This form must be fully completed before any work can be submitted to the Laboratory.

Person submitting samples: Naina (PhD student, MinEx CRC, ANU)
Project Title: Cambro-Ordovician magmatism and deformation at the eastern margin of Gondwana, South Australia: Insights into tectonic processes and mineral potential
Sample Number: Mundi Granite (3 samples)
Date submitted:

GEOGRAPHIC AREA/ PROVINCE/ BASIN:	
1:250k SHEET NAME: Broken Hill	NUMBER:
1:100k SHEET NAME:	NUMBER:
LOCATION METHOD: (GPS: WGS84 / AGD66 / AGD84 / GDA94) WGS84	
ZONE:	
EASTING:	NORTHING:
LATITUDE: 31°13'26.00"S	LONGITUDE: 141°13'43.00"E

STRATIGRAPHIC UNIT FORMAL NAME: Mundi Mundi Granite
STRATIGRAPHIC UNIT INFORMAL NAME: Mundi Mundi Granite
LITHOLOGY: Post-deformation granite

DRILLHOLE ID (if applicable):
PROSPECT (if applicable):
DEPTH FROM (metres):
DEPTH TO (metres):

Dating Objective

What is the geological question $^{40}\text{Ar}/^{39}\text{Ar}$ analysis will address?

The Ar-Ar analysis of Mundi Mundi Granite would help in constructing the thermal history of the Curnamona province

What type of age(s) are expected? (e.g. magmatic crystallisation, metamorphism, fluid alteration/mineralisation, cooling, shearing etc):

Magmatic crystallisation, metamorphic, cooling ages.

Mineral target(s) for dating (provide approximate K content if known):

Biotite (9%K), White mica (10%K), K-Feldspar (11%K).

Estimated $^{40}\text{Ar}/^{39}\text{Ar}$ age (e.g. Cenozoic, Mesozoic, Paleozoic, Proterozoic, Archean – provide estimated numerical age range if possible):

Estimated age for this granite is 1500Ma.

Relative age constraints (pertinent geological relationships with surrounding rock units and any previous geochronology):

Sample Information

Location description (e.g. a sample of x was collected from y, z km from abc town or locality):

The sample was collected near Boulder tank area (31°13'26.00"S, 141°13'43.00"E)

Lithological characteristics (rock description):

The mundi granite is a massive, equigranular, pink to grey, quartz muscovite biotite K-feldspar granite with moderate weathering but fresh crystals.

Thin section description (if available): No thin section available.

Photograph(s) e.g. field site, hand-specimen, photomicrograph: (add picture hand specimen)

Relevant bibliographic references:

Cooper, J A, and K R Ludwig. "Inherited zircons in the Mundi Mundi Granite, Broken Hill, New South Wales." Australian Journal of Earth Sciences 32, no. 4 (August 2007): 467-470.