National Argon Map: an AuScope Initiative
$^{40}Ar/^{39}Ar$ Geochronology Laboratory Sample Submission Form

This form must be completed and returned to Marnie Forster (Marnie.Forster@anu.edu.au) before any work can be commenced in the Argon Laboratories.

Person submitting samples: Ian T Graham
Affiliation: UNSW Sydney
Project Title: Geology, Petrology and Gem Minerals of the Anakie Gemfields, central Queensland.
Sample Number(s) (including IGSN if one exists): NRSP-24
Mineral separation required? Yes or No: No
Date submitted:

GEOGRAPHIC AREA/ PROVINCE/ BASIN : Anakie Inlier	
1:250k SHEET NAME: Emerald	**NUMBER:** SE-55-15
1:100k SHEET NAME: Rubyvale	**NUMBER: 8451**
LOCATION METHOD: (GPS: WGS84 / AGD66 / AGD84 / GDA94) GDA-94	
ZONE: 55	
EASTING: 147.54684E	**NORTHING:** 23.26499S
LATITUDE:	**LONGITUDE:**

STRATIGRAPHIC UNIT FORMAL NAME *: Hoy Basalt Province
STRATIGRAPHIC UNIT INFORMAL NAME:
LITHOLOGY: Basalt

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

* Stratigraphic Unit names can be searched and checked within the Australian Stratigraphic Units Database via the following link: https://asud.ga.gov.au/

Dating Objective

What is the geological question $^{40}Ar/^{39}Ar$ analysis will address? This sample is from another small plug, different in texture and mineralogy to NRSP-5 which is also to be age dated. The distance between these two plugs is approximately 27km. A significant difference in age will help narrow the timing of the volcanic activity that potentially elevated corundums to the surface. However, there are no sapphire workings near this sample (NRSP-24).

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

Mineral target(s) for dating: None (wholerock)

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

Sample Information

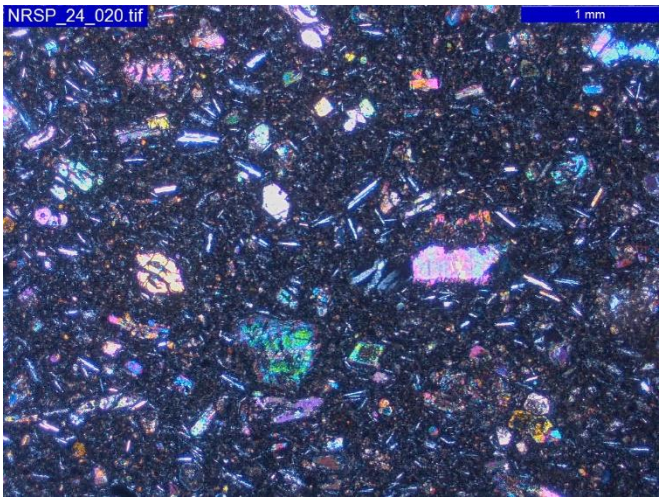
Location description (e.g. a sample of x was collected from y, z km from abc town): Sample was collected 23km NW of Rubyvale and/or 150m SW of Mt Mica homestead.

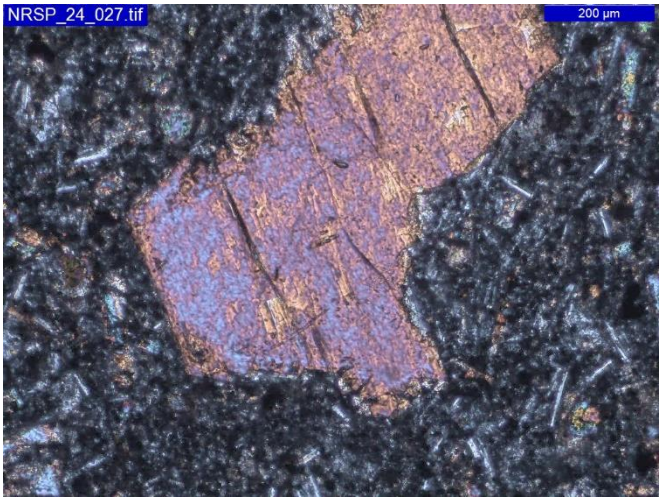
Lithological characteristics (rock description): Fine grain porphyritic olivine basalt.

Relative age constraints (pertinent geological relationships with surrounding rock units and any previous geochronology): This plug intrudes the Mt Newsome Granodiorite of mid- to late Devonian age.

Thin section description (if available): Porphyritic olivine basalt with corroded pyroxene xenocrysts. Olivine phenocrysts are anhedral to subhedral. The groundmass consists of microcrystalline laths of plagioclase, clinopyroxene, opaques and altered glass.

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





Relevant bibliographic references: