

National Argon Map: an AuScope Initiative

$^{40}\text{Ar}/^{39}\text{Ar}$ 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): HOY-BSLT
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: 147.42079E	NORTHING: 23.3879S
LATITUDE:	LONGITUDE:

STRATIGRAPHIC UNIT FORMAL NAME *: Hoy Basalt Province
STRATIGRAPHIC UNIT INFORMAL NAME:
LITHOLOGY: Porphyritic olivine 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 $^{40}\text{Ar}/^{39}\text{Ar}$ analysis will address? Mt Hoy has not been previously dated, yet the plug is believed to contain rare corundum. Dating of Mt Hoy is expected to perhaps constrain the age of surrounding ash deposits, assuming trace element patterns are similar. Additionally, the basaltic province in this part of Queensland is called the 'Hoy Basalt Province' and yet there are no dates for this iconic plug.

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 (whole rock).

Estimated $^{40}\text{Ar}/^{39}\text{Ar}$ age (e.g. Cenozoic, Mesozoic, Paleozoic, Proterozoic, Archean – provide estimated numerical age range if possible): The age is anticipated to be upper Eocene or Oligocene in the Cenozoic Era.

Sample Information

Location description (e.g. a sample of x was collected from y, z km from abc town): This sample was collected 28km NbW of the town of Rubyvale, Central Queensland at an elevation of 445m absl.

Lithological characteristics (rock description): Fine grained olivine basalt, mid-grey in colour.

Relative age constraints (pertinent geological relationships with surrounding rock units and any previous geochronology): Mt Hoy intrudes the Chinaman Fault, at the contact between the Devonian Retreat Granite and upper Devonian Telemon Formation.

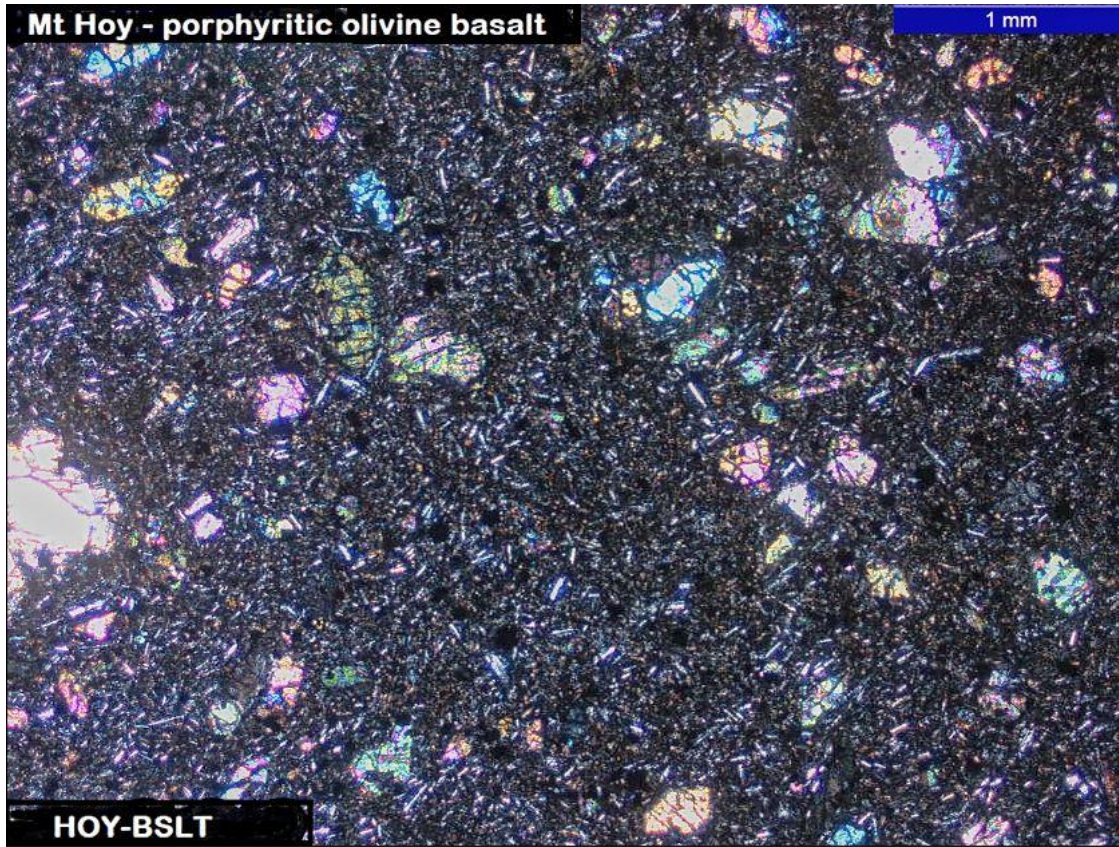
Thin section description (if available):

Porphyritic olivine basalt. In thin-section it contains fractured subhedral to idiomorphic olivine phenocrysts in a microcrystalline groundmass of feldspar and clinopyroxene microlites, altered glass, and scattered opaques (<1%).

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



HOY-BSLT



Relevant bibliographic references: