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BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

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Catalogue of
Radiometric Age Determinations
carried out on
Australian Rocks in 1966

Compiled by

R.W. PAGE



The information contained in this report has been obtained by the Department of National Development as part of the policy of the Commonwealth Government to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus or statement without the permission in writing of the Director, Bureau of Mineral Resources, Geology & Geophysics.



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SUMMARY

A catalogue of recent age determinations carried out on 262 samples from Australian territory has been compiled. This record lists sample numbers, method of age determination, analytical data, locality, collector and a brief evaluation and comment on the age. Most of the determinations have been carried out at the Department of Geophysics and Geochemistry, Australian National University, Canberra. Some results have been supplied by companies. No new age determinations from South Australia or the Australian Capital Territory were made available in 1966.

INTRODUCTION

Age determinations carried out on Australian rocks were summarized to December 1965 by R.P. Coats (1961), D.A. White (1962) and R.R. Harding (1966). The present record lists the age determinations which became available between January and December, 1966. Much of this data is so far unpublished.

The determinations represent independent projects of the staff and students of the Department of Geophysics and Geochemistry, and a substantial proportion are the result of co-operation between this Department and the Bureau of Mineral Resources in the programme of dating the Australian continent. In this programme, specimens for age determination are collected by Bureau field parties and analysed under the supervision of members of staff of the Department, on machines provided by the University and the Bureau. The samples are listed under State headings and are further subdivided on the basis of publication. The list of published papers referred to in this record appear under "General" or under State headings at the end of this record. An abbreviated reference number e.g., N.S.W. 1, N.S.W. 2 etc. is given to each publication.

The K-Ar data listed for each sample are set out as follows:

Ref. No.	Type of sample analysed.	Method of determination.	<u>Age.</u>
B.M.R. No.	Analytical Data.		
GA or	Rock type.		
Sample No.	Locality.		
	Latitude. Longitude.	Name of 1:250,000 Sheet area.	
	Collector.		
	Evaluation of age.		

The Rb-Sr data are not amenable to this form of presentation.

It was aimed to present enough analytical data for the reader also to evaluate the age quoted for a particular specimen. It must be emphasized, however, that for discussion of the limitations and for proper assessment of the results, the original publication or the analyst should be consulted.

The GA or sample number of each set of data is tabulated (Table 1) under "Period" and "State". Precambrian has been divided into Proterozoic (Adelaidean 600-1400 m.yr, Carpentarian 1400-1800 m. yr and "Lower Proterozoic" 1800-2500 m. yr) and Archaean. Each subdivision in the Proterozoic has been further subdivided into 200 million year periods for ease of presentation. The divisions of Phanerozoic time are taken from "The Phanerozoic Time-scale" (Geol. Soc. London, 1964), to which readers should refer for a discussion of the evidence for the divisions. Different components (e.g. feldspar and biotite) of some samples indicate different ages; in these cases, the sample number is assigned to the older or to the more reliable age and tabulated accordingly.

The samples are also indexed according to 1:250,000 sheet number (Index I), and in order of GA and sample number (Index II). Text Figure 1 shows the location of sheet numbers in Australia; those areas from which samples have been dated are shaded. If, for example, the reader wishes to ascertain which rocks have been analysed isotopically from North Queensland, he should consult Text Figure 1 and note the appropriate 1:250,000 sheet numbers, consult the Queensland part of Index I for these numbers, and note the page references indicated. Areas of Australia at present being investigated geochronologically, but for which data are not yet available, include the Kalgoorlie region (W.A.), Pilbara region (W.A.), Bowen Basin (Qld), Broken Hill (N.S.W.), and New Guinea, and Antarctica. Text Figure 2 shows the location of samples dated from New Guinea and Antarctica.

Unless otherwise stated, the constants used in determining the ages listed are:

K-Ar Methods:	$\lambda_{\beta}^{K^{40}}$	= $4.72 \times 10^{-10} \text{ yr}^{-1}$ (3% uncertainty)
	$\lambda_{e}^{K^{40}}$	= $0.584 \times 10^{-10} \text{ yr}^{-1}$ (")
	$\frac{K^{40}}{K}$	= $1.22 \times 10^{-4} \text{ g/gK} = 1.19 \times 10^{-4}$ mole/mole K.

Rb-Sr Method:	$\lambda_{\beta} \text{Rb}^{87}$	$= 1.39 \times 10^{-11} \text{yr}^{-1}$ (6% uncertainty)
	$\text{Rb}^{85}/\text{Rb}^{87}$	$= 2.600$
	$\text{Sr}^{88}/\text{Sr}^{86}$	$= 8.375$

The Sr in most samples was determined by isotope dilution, but where the present day $\text{Sr}^{87}/\text{Sr}^{86}$ was determined on an unspiked sample, the $\text{Sr}^{87}/\text{Sr}^{86}$ value quoted in the text is followed by "(unsp.)". The initial $\text{Sr}^{87}/\text{Sr}^{86}$ value of the sample, quoted after the age of the sample, may have been assumed, or deduced from an isochron: this is indicated by (A) or (I) respectively.

C^{14} Method: Results of C^{14} age determinations carried out on Australian samples of archaeological or geological interest appear in the "Australian Journal of Science", and in "Radiocarbon", an annual publication of the "American Journal of Science".

An attempt has been made to collect all the information available concerning age determinations of Australian rocks; however, it would be appreciated if the Bureau of Mineral Resources could be notified of any omissions so that they can be included in the next Catalogue of Age Determinations.

ACKNOWLEDGEMENTS

I am indebted to members of the Department of Geophysics and Geochemistry, and to Dr R.R. Harding, Mr E.W. Parkinson and Mr P.R. Dunn for their assistance and advice in the collection and presentation of the age determination results.

The Hunt Oil Company permitted the inclusion of confidential information from Lennis No. 1 Oil Bore.

ANTARCTICA

Ref: ANT 1, 2

R42/43		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
G.A.5429	Total Rock	29.3	163.8	0.5163	0.7131
G.A.5430	"	18.9	163	0.3567	0.7100
G.A.5431	"	14.4	269.9	0.1540	0.7073
G.A.5432	"	26.5	153.3	0.4997	0.7121
G.A.5433	"	14.2	274.3	0.1492	0.7072
G.A.5434	"	14.3	273.9	0.1504	0.7077

Rb-Sr age : 1030 ± 220 m.y. Initial Sr $^{87}/\text{Sr}^{86}$
 0.7052 ± 0.0001 .

From dolerites collected by I.R. McLeod.

G.A.5429. Lat. $68^{\circ}34'30''\text{S}$. Long. $77^{\circ}58'\text{E}$.

400 yards north of hydrogen shed, Davis.

G.A.5430-G.A.5433. Lat. $68^{\circ}35'30''\text{S}$. Long. $77^{\circ}57'\text{E}$.,
 south side of Heidemann Bay, Vestfold Hills.

G.A.5434. Lat. $68^{\circ}35'30''\text{S}$. Long. $77^{\circ}58'\text{E}$.

South side of Heidemann Bay, Vestfold Hills.

NEW SOUTH WALES

Ref: N.S.W. 1

H55/16

G.A.1372

Plagioclase, K-Ar age : $181 \pm$ m.y.

% K		$^{40}\text{Ar}/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.558	} 0.558	1.107×10^{-2}	5.4
0.559			

Basalt. Coonabarabran-Gunnedah District in

Borah Creek, 7.5 miles N. of Rocky Glen.

Lat. $31^{\circ}2'$. Long. $149^{\circ}32.5'$.

Ref: N.S.W. 1

H55/16

G.A.1373

Whole Rock, K-Ar age : 193 ± 10 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
1.205	} 1.205	1.187×10^{-2}	2.3
1.206			

Basalt. Coonabarabran-Gunnedah District, 10

miles W.S.W. of Mullally. Lat. $31^{\circ}7'$.

Long. $149^{\circ}44'$.

Ref: N.S.W. 1 Whole Rock, K-Ar age : 13.8 ± 0.3 m.y.
H55/16 % K $^{40}\text{Ar}^*/^{40}\text{K}$ % $^{40}\text{Ar}^{\text{atm}}$
G.A. 1374 1.083) 1.086 8.07×10^{-4} 47.4
1.090)

Basalt. Coonabarabran-Gunnedah District on
Oxley Highway. Lat. $31^{\circ}27.5'$. Long. $149^{\circ}0.5'$.

Ref: N.S.W. 1 Whole Rock, K-Ar age : 13.5 ± 0.4 m.y.
H55/16 % K $^{40}\text{Ar}^*/^{40}\text{K}$ % $^{40}\text{Ar}^{\text{atm}}$
G.A. 1375 1.23) 1.24 7.89×10^{-4} 39.1
1.25)

Basalt. Coonabarabran-Gunnedah district on
Oxley Highway. Lat. $31^{\circ}23'$. Long. $149^{\circ}15.5'$.

Ref: N.S.W. 2 Biotite, K-Ar age : 23.1; 23.4 m.y.
H56/3 % K $^{40}\text{Ar}^*/^{40}\text{K}$ % $^{40}\text{Ar}^{\text{atm}}$
G.A. 1408 6.933) 6.93 1.362×10^{-3} 21.7
6.932) 1.315×10^{-3} 23.0

Gabbro. Mt Warning-Murwillumbah 1 mile
468, 773. Probably reliable.

Ref: N.S.W. (Unpublished)
H54/12/4 Pyroxene, K-Ar age : 458 m.y. $\pm$ 25%
G.A. 5389 % K $^{40}\text{Ar}^*/^{40}\text{K}$ % $^{40}\text{Ar}^{\text{atm}}$
0.020) 0.024 3.0255×10^{-2} 78.9
0.027)

Dolerite. Kayrunnera. White Cliffs.
Lat. $30^{\circ}40'$. Long. $142^{\circ}33'$. Collected by
G. Rose. Unreliable. The spread in the
potassium determination accounts for the large
uncertainty in the age.

NORTHERN TERRITORY

Ref: N.T. (Unpublished)

G53/2 Orthopyroxene, K-Ar age : 584 m.y.
 G.A. 1059K % K $^{40}\text{Ar}^*/^{40}\text{K}$ % $^{40}\text{Ar}^{\text{atm}}$
 0.0418) 39.952 x 10⁻³ 53.0
 0.0426)
 Pyroxenite at 4651 ft.
 Ooraminna No. 1 Well, 42 miles S.E. of Alice
 Springs. Alice Springs. Lat. 24°00'06".
 Long. 134°09'50". Collected by B.M.R.

Ref: N.T. (Unpublished)

E53/10 Glauconite, K-Ar age : 1562 m.y.
 G.A. 2075 % K $^{40}\text{Ar}^*/^{40}\text{K}$ % $^{40}\text{Ar}^{\text{atm}}$
 6.757) 142.14 x 10⁻³ 0.7
 6.781)
 From Tomkinson Creek Bed, 5 ml. W. of
 Churchills Head (Stuart Highway). Lat. 18°56'.
 Long. 134°02'. Helen Springs 1:250,000.
 Collected by M. Brown and M. Randal.

Ref: N.T. (Unpublished)

D52/11 K-Ar age (1) 1393 ± 84 m.y.
 (2) 1523, 1537 m.y.
 (1) 1.62, 1.60, 1.48 % K in plagioclase.
 (2) 0.24, 0.24, 0.22 % K in pyroxene.
 From labradorite-diopside gabbro, core 7,
 Moyle No. 1 Well. Port Keats 1:250,000.
 Lat. 14°19'10"S. Long. 129°46'31"E.
 Collected by Australian Aquitaine Petroleum.

Ref: N.T. (Unpublished)

	Rb g/g	Sr g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
F53/14				
G.A. 5249A Total Rock	183.8	21.4	24.683	0.9382
G.A. 5249B "	143.4	29.5	13.994	0.8602
G.A. 5249D "	151.1	20.5	21.138	0.9103
G.A. 5249F "	273.2	21.2	36.953	1.0323

Rb-Sr age : 538 ± 32 m.y.

Collected by A.T. Wells. Shale from Heavitree
 Quartzite. Lat. 23°43'. Long. 133°51'.
 Alice Springs 4 mile sheet area. Apparent age,
 representing the age of homogenization of the
 sediments.

QUEENSLAND

Ref: QLD 1

G55/12

G.A. 1979

Whole Rock, K-Ar age : 22.7 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
-----	--	----------------------------------	---------------------------------

0.913)	0.915	1.334×10^{-3}	50.8
0.918)			

Dolerite cutting duricrust near Roma.

Roma-Injune road, 20 miles north of Roma.

Minimum age only.

Ref: QLD 2

G55/1

R 0581

Total Rock, K-Ar age : 362 ± 8 m.y.

K	%	$^{40}\text{Ar}^*/^{40}\text{K}$	
---	---	----------------------------------	--

From volcanic rock, 11,134 - 11,140 ft,

Carlow No.1 Well. Lat. $24^{\circ}50'27''\text{S}$.Long. $145^{\circ}25'48''\text{E}$. Blackall. Collected by

Phillips-Sunray. Minimum age.

Ref: QLD 3

H56/2

G.A. 1400

Whole Rock, K-Ar age : 22.0; 22.1 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
-----	--	----------------------------------	---------------------------------

1.856)		1.294×10^{-3}	2.9
1.850)	1.85	1.303×10^{-3}	6.0

Andesine basalt. Mt Mitchell (Cunningham's Gap).

3745' elevation. Main Range Volcanics.

Probably reliable age of extrusion. c.f. G.A.1401,

1403, 1404.

Ref: QLD 3

H56/2

G.A. 1401

Whole Rock, K-Ar age : 22.3 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
-----	--	----------------------------------	---------------------------------

1.317)		1.309×10^{-3}	12.9
1.317)	1.32		

Olivine basalt. Mt Mitchell (Cunningham's Gap).

3330' elevation. Main Range Volcanics.

Probably reliable age of extrusion.

Ref: QLD 3
H56/2
G.A. 1403

Whole Rock, K-Ar age : 23.7 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
2.314)			
2.314)	2.31	1.392×10^{-3}	60.9

Oligoclase basalt. Mt Mitchell (Cunningham's Gap).
2280' elevation. Main Range Volcanics.
Probably reliable age of extrusion.

Ref: QLD 3
H56/2
G.A. 1404

Whole Rock, K-Ar age : 23.8; 23.9 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
2.337)			
2.337)	2.34	1.399×10^{-3}	46.2
		1.403×10^{-3}	51.5

Pyroxene trachyte. Mt Mitchell (Cunningham's Gap).
1750' elevation. Main Range Volcanics.
Probably reliable age of extrusion.

Ref: QLD 3
G56/14
G.A. 1407

Plagioclase, K-Ar age : 29.1 ± 1.5 ; 28.7 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.2158)			
0.2151)	0.216	1.712×10^{-3}	62.4
		1.690×10^{-3}	59.4

Analcite gabbro. Flinders Teschenite, Limestone
Ridges. Flinders 1 mile 842 488.
Probably reliable.

Ref: QLD 3
G56/10
G.A. 1410

Whole Rock, K-Ar age : 24.7 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
3.482)			
3.486)	3.48	1.453×10^{-4}	8.0

Comendite. Mt NgunNgun. Glasshouse 1 mile
106 593. Probably reliable age.

Ref: QLD 3
G56/10
G.A. 1411

Whole Rock, K-Ar age : 24.9 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
3.691)			
3.709)	3.70	1.463×10^{-3}	13.9

Comendite. Trachyte Range. Glass Houses.
Glass House 1 mile 129 527.
Probably reliable age.

Ref: QLD 3

G56/10

G.A. 1412

Whole Rock, K-Ar age : 24.7 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
-----	--	----------------------------------	---------------------------------

3.717)			
3.715)	3.72	1.454×10^{-3}	1.3

Comendite. Mt Coolum. Manpochydore 1-mile
275 995. Probably reliable age.

Ref: QLD 3

H56/2

G.A. 1413

Whole Rock, K-Ar age : 22.6 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
-----	--	----------------------------------	---------------------------------

3.475)			
3.475)	3.48	1.327×10^{-3}	19.4

Comendite. Mt Greville. Dugandan 1 mile
627 160. Minimum age only.

Ref: QLD 3

G56/14

G.A. 5299

Whole Rock, K-Ar age : 63.2, 59.1 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
-----	--	----------------------------------	---------------------------------

0.2694)			
0.2688)	0.269	3.757×10^{-3}	52.2
		3.505×10^{-3}	52.3

Basalt. Mt Walker Creek, on Cunningham Highway.
Ipswich 1 mile 796 586.
Minimum age only.

Ref: QLD 3

G56/2

G.A. 5300

Whole Rock, K-Ar age : 24.0 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
-----	--	----------------------------------	---------------------------------

3.900)			
3.902)	3.90	1.414×10^{-3}	8.7

Analcite-microsyenite. Mt Edwards, Moogerah Dam.
Dugandan 1-mile 670 227. Probably reliable.

Ref: QLD 3

H56/2

G.A. 5301

K-feldspar, K-Ar age: 22.6; 24.6; 23.2; 22.9 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
-----	--	----------------------------------	---------------------------------

5.508)		1.326×10^{-3}	6.1
5.522)	5.52	1.449×10^{-3}	14.5
		1.364×10^{-3}	6.2
		1.345×10^{-3}	15.8

Quartz-feldspar porphyry. Vertical dyke in Mt
Afford Ring Complex. Dugandan 1 mile 648 166.
Reliable age determination is doubtful.

Ref: QLD 3

G56/14

G.A. 5302

Whole Rock, K-Ar age : 194 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
1.813)		
1.807)	1.81	1.138×10^{-3}
		11.8

Olivine basalt. Municipal Quarry, Toowoomba.

Toowoomba 1-mile 064 810.

Minimum age only.

Ref: QLD 3

G56/14

G.A. 5304

Whole Rock, K-Ar age : 24.1 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
4.472)		
4.511)	4.49	1.420×10^{-3}
		18.01

Pyroxene trachyte. Mt Flinders, northern

foothills. Flinders 1-mile 942 497.

Probably reliable age.

Ref: QLD 3

G56/14

G.A. 5316

Whole Rock, K-Ar age : 22.1 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
2.283)		
2.284)	2.28	1.300×10^{-3}
		9.5

Basalt. Nanango, Kumbia 1-mile 746 803.

Probably reliable.

Ref: QLD 3

H56/2

G.A. 5367

K-feldspar, K-Ar age : 22.7; 22.6 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
6.432)		
6.451)	6.44	1.336×10^{-3}
		1.329×10^{-3}
		19.0
		28.6

Porphyritic pitchstone. 1 mile S. of Mt Gillies.

Lindesay 1-mile 892 903.

Reliable age.

Ref: QLD 3

H56/2

G.A. 5368

Whole Rock, K-Ar age : 23.1 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
3.968)		
3.951)	3.96	1.360×10^{-3}
		31.5

Rhyolite. 0.3 miles N. of Mt French. Dugandan

1-mile 733 263. Probably reliable age.

Ref: QLD 3	Whole Rock, <u>K-Ar age : 23.2 m.y.</u>		
G56/14	% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
G.A. 5540	4.338) 4.327)	4.33	1.366×10^{-3} 35.0
	Pyroxene trachyte. 3.5 miles N.N.E. of Cooley Creek Dam. Jondaryan 1-mile 027 072.		
	Probably reliable.		
Ref: QLD 3	Whole Rock, <u>K-Ar age : 20.0 m.y.</u>		
H56/3	% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
G.A. 5541	1.957) 1.963)	1.96	1.176×10^{-3} 35.0
	Albert basalt. S. of Canungra. Springbrook 1-mile 330 215. Minimum age.		
Ref: QLD 3	Whole Rock, <u>K-Ar age : 21.8 m.y.</u>		
H56/3	% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
G.A. 5542	1.353) 1.349)	1.35	1.282×10^{-3} 25.3
	Beechmont basalt. Mt Misery. Below Eagle Heights Member. Springbrook 1-mile 305 235. May be reliable. Probably the best determination on the Lamington Group lavas (G.A. 5541, 5542, 5543, 5544).		
Ref: QLD 3	Whole Rock, <u>K-Ar age : 21.1 m.y.</u>		
H56/3	% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
G.A. 5543	1.740) 1.724)	1.73	1.240×10^{-3} 59.9
	Beechmont basalt. N. end of Beechmont Plateau on Canungra-Beechmont road. Springbrook 1-mile 363 152. Minimum age.		
Ref: QLD 3	Whole Rock, <u>K-Ar age : 23.4 m.y.</u>		
H56/2	% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
G.A. 5545	4.358) 4.313)	4.34	1.378×10^{-3} 8.7
	Granophyre. Rocky Creek. Margin of Mt Barney-Lindesay 1-mile 834 926. Probably reliable.		

Ref: QLD 3

H56/3

G.A. 5544

Whole Rock, K-Ar age : 21.3 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
1.277	1.28	1.252×10^{-3}
1.279		
		28.9

Top of Beechmont basalt, $\frac{1}{2}$ mile N.W. of Buna

Buna. Springbrook 1-mile 346 019.

Minimum age.

Ref: QLD (Unpublished)

E55/14/44

G.A.5274

Biotite, K-Ar age : 440; 451 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
6.56	28.972×10^{-3}	1.6
6.56	29.780×10^{-3}	3.0

Hornblende, K-Ar age : 420 m.y.

0.676	27.466×10^{-3}	4.9
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Ravenswood Granodiorite. Road cutting, $\frac{1}{2}$ mile E. of Mingela.Townsville. Lat. $19^{\circ}52'30''$. Long. $146^{\circ}38'30''$.

Collected by A.W. Webb and D. Clarke.

Ref: QLD (Unpublished)

E55/14/1

G.A. 5283

Biotite, K-Ar age : 420 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
6.12	27.496×10^{-3}	1.4

Ravenswood Granodiorite. Road from Mingela to Fanning River Hs.

Townsville. Lat. $19^{\circ}46'S$. Long. $146^{\circ}29'30''E$.

Collected by A.W. Webb and D.H. Wyatt.

Ref: QLD (Unpublished)

E55/14/17

G.A. 5284

Biotite, K-Ar age : 298 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
5.405	18.863×10^{-3}	3.9

Oweenee Granite, 6 miles along track N. from Lassie Creek-Laroona Hs. road.

Townsville. Lat. $19^{\circ}16'30''$. Long. $145^{\circ}52'00''$.

Collected by A.W. Webb.

Ref: QLD (Unpublished)

F55/02/10

G.A. 5285

Muscovite, K-Ar age : 401 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
8.89	26.134×10^{-3}	2.3

Banded garnet-muscovite granite. 50 yds E. of track from Deadman's Creek to Toomba-Glencoe Road. Charters Towers. Lat. $20^{\circ}11'30''\text{S}$. Long. $145^{\circ}36'30''\text{E}$. Collected by A.W. Webb, A.G.L. Paine, and G.W. Tweedale.

Ref: QLD (Unpublished)

E55/14/05

G.A. 5535

Biotite, K-Ar age : 277 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
7.594	17.453×10^{-3}	1.1
7.616		

Granodiorite. Six Mile Creek, $1\frac{1}{2}$ miles E.N.E. of Carey's Dam. Townsville. Lat. $19^{\circ}22'\text{S}$. Long. $146^{\circ}15'30''\text{E}$. Collected by A.W. Webb and D.H. Wyatt.

Ref: QLD (Unpublished)

E55/14/18

G.A. 5533

Biotite, K-Ar age : 283 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
7.401	17.819×10^{-3}	2.0
7.371		

Pall Mall Adamellite. On track from Dotswood Hs. to Laroona Hs. Townsville. Lat. $19^{\circ}30'00''$. Long. $146^{\circ}10'00''$. Collected by A.W. Webb.

Ref: QLD

F54/9

G.A. 5390

Biotite, K-Ar age : 1665 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
5.871)		
5.833)	5.85	0.15621
		1.7

Bore Core. Basement. Netting Fence No. 1; depth 6441'. 49 miles west of Glenormiston. Lat. $22^{\circ}56'05''$. Long. $138^{\circ}02'06''$. Collected by Papuan Apinaipi.

Ref: QLD (Unpublished)

G54/8

R0695

Whole Rock, K-Ar age : 479 ± 15 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
2.34)	2.345	0.0319
2.35)		
		10.4%

Shale from Galway No. 1 Well, Core 7, at 8857 ft.

Windorah 1:250,000.

Lat. $25^{\circ}04'30''$. Long. $142^{\circ}33'41''$.

Minimum age and probably unreliable.

Ref: QLD (Unpublished)

G55/6

No details given. "Approximate true" age: 420 ± 20 m.y. From porphyry in Core 9, Balfour No. 1 Well, Augathella 1:250,000 Sheet.Lat. $25^{\circ}32'13''\text{S}$. Long. $146^{\circ}42'40''\text{E}$.

Age determination by Geochron Laboratories Inc.

Mass. U.S.A. Collected by American Overseas Petroleum.

Ref: QLD (Unpublished)

G55/7

Total Rock, K-Ar age : 187 ± 20 m.y.

From dacitic volcanics in terminal core of

Curro No. 1 Well, 70 miles N.E. of Augathella.

Eddystone 1:250,000. Lat. $25^{\circ}06'55''$.Long. $147^{\circ}04'34''$. Collected by American Overseas Petroleum.

Ref: QLD (Unpublished)

G55/11

Biotite, K-Ar age : 324 ± 12 m.y.

% K	$^{40}\text{Ar}^*$ ppm	% $^{40}\text{Ar}^{\text{atm}}$
6.68)	0.170	6.5
6.60)	0.166	4.0

Adamellite. Scalby No. 1, Core No. 1;

2817'-2832' from basement. Mitchell.

Lat. $26^{\circ}57'54''$. Long. $147^{\circ}23'45''$.

Collected by American Overseas Petroleum.

TASMANIA

Ref: TAS 1, 2

K55/5 and K55/3 (G.A.1125A, B + G.A.1126)

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
G.A.205	Total Rock	326	45.5	20.61	0.8160
G.A.748A	"	322	45.3	20.45	0.815 (unsp.)
G.A.748B	"	325	45.3	20.42	0.8153 (unsp.)
G.A.814A	"	378	38.3	28.39	0.8624 (unsp.)
G.A.814B	"	375	37.7	28.67	0.8660 (unsp.)
G.A.815A	"	392	22.3	50.50	0.9582
G.A.815B	"	393	22.3	50.58	0.9585
G.A.816A	"	357	9.66	106.1	1.2299
G.A.816B	"	354	9.54	106.7	1.2300
G.A.817A	"	331	46.6	20.40	0.8201 (unsp.)
G.A.817B	"	331	46.4	20.49	0.8199 (unsp.)
G.A.821A	"	317	72.4	12.56	0.7850 (unsp.)
G.A.821B	"	317	74.1	12.23	0.7848 (unsp.)
G.A.826A	"	306	17.0	51.52	0.9622
G.A.826C	"	308	17.1	51.67	0.9611
G.A.1125A	"	421	7.66	157.9	1.4899
G.A.1125B	"	420	7.69	156.8	1.4901
G.A.1126	"	424	14.1	86.51	1.1351
G.A.1200	"	139	259	1.55	0.7268 (unsp.)
G.A.1201	"	364	42.1	24.9	0.8322 (unsp.)

Age 346 ± 8 m.y. Initial Sr⁸⁷/Sr⁸⁶ $0.7190 \pm 0.0051(I)$

G.A.205 Lat. $41^{\circ}48'13''S$. Long. $145^{\circ}10'35''E$. Queenstown.

From Rapakivi type adamellite, Trial Harbour.

Collected by A. Spry.

"Two-error-regression" analysis indicates that scatter of results of red granite about regression line is more than experimental error could account for Geological variation (probably a range in initial Sr⁸⁷/Sr⁸⁶) is present. High initial Sr⁸⁷/Sr⁸⁶ attributed to crustal contamination of primary magma or to generation of magma from crustal source.

- G.A.748 Lat. $41^{\circ}48'44''\text{S}$. Long. $145^{\circ}09'12''\text{E}$.
Queenstown. From Heemskirk Granite, 1 ml N.W.
of Trial Harbour. Collected by T. Green.
See G.A.205.
- G.A.814A,B - Lat. $41^{\circ}48'30''\text{S}$. Long. $145^{\circ}08'40''\text{E}$. Queenstown.
G.A.815A,B From tourmaline granite (Heemskirk), The Gut,
1 mile N. of Trial Harbour.
Collected by C. Brooks. See G.A.205.
- G.A.816A,B - From pegmatite (816) and red Heemskirk granite
G.A.817A,B (817) 1 mile north of Trial Harbour.
816 - Lat. $41^{\circ}48'45''\text{S}$. Long. $145^{\circ}09'99''\text{E}$ Queenstown.
817 - Lat. $41^{\circ}47'35''\text{S}$. Long. $145^{\circ}11'56''\text{E}$ Queenstown.
Collected by C. Brooks. See G.A.205.
- G.A.821A,B Lat. $41^{\circ}48'40''\text{S}$. Long. $145^{\circ}10'30''\text{E}$ Queenstown.
From grey adamellite (marginal facies of Red
Heemskirk Granite) 1 mile from Trial Harbour on
Trial-Zeehan road.
Collected by C. Brooks. See G.A.205.
- G.A.826A,C From aplite, The Gut, 1 mile north of Trial Harbour.
Lat. $41^{\circ}48'40''\text{S}$. Long. $145^{\circ}09'08''\text{E}$ Queenstown.
Collected by C. Brooks. See G.A.205.
- G.A.1125A,B Lat. $41^{\circ}43'36''\text{S}$. Long. $145^{\circ}09'25''\text{E}$ Burnie.
From marginal Red Heemskirk Granite (aplitic) about
6 miles north of Trial Harbour.
Collected by C. Brooks. See G.A.205.
- G.A.1126 Lat. $41^{\circ}44'08''\text{S}$. Long. $145^{\circ}10'22''\text{E}$ Burnie.
From aplitic adamellite, Mt Heemskirk.
Collected by C. Brooks. See G.A.205.
- G.A.1200 Lat. $41^{\circ}48'40''\text{S}$. Long. $145^{\circ}08'55''\text{E}$ Queenstown.
From pyroxene aplite dyke, north of Trial Harbour.
Collected by C. Brooks. See G.A.205.

G.A.1201 Lat. $41^{\circ}46'16''\text{S}$. Long. $145^{\circ}12'15''\text{E}$ Queenstown.
 From Red Heemskirk Granite. Zeehan.
 Collected by C. Brooks. See G.A.205.

Ref: TAS 1,2,4

K55/3		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
G.A.819A	Total Rock	448	6.42	200.5	1.7412
G.A.819B	"	450	6.42	201.3	1.7395
G.A.824A	"	400.0	61.3	18.76	0.8345
G.A.824B	"	401.0	61.2	18.87	0.8349 (unsp.)
G.A.1447	"	443	65.2	19.51	0.8370
G.A.1448	"	374	16.3	65.83	1.0676

Age 357 ± 6 m.y. Initial Sr $^{87}/\text{Sr}^{86}$ $0.7408 \pm 0.0036(\text{I})$.
 Collected by C. Brooks.

G.A.819,A,B Lat. $41^{\circ}43'00''\text{S}$. Long. $145^{\circ}03'18''\text{E}$ Burnie.
 From White Heemskirk Granite (Series B) North
 Tasman Creek. Results of white granite 'B' lie
 on straight line to within experimental precision.
 High initial Sr $^{87}/\text{Sr}^{86}$ attributed to crustal
 contamination of primary magma or to generation of
 magma from crustal source.

G.A.824A,B Lat. $41^{\circ}42'45''\text{S}$. Long. $145^{\circ}03'03''\text{E}$ Burnie.
 From porphyritic grey Heemskirk Granite, North
 Tasman Creek. See G.A.819.

G.A.1447 Lat. $41^{\circ}42'18''\text{S}$. Long. $145^{\circ}03'52''\text{E}$. Burnie.
 From white Heemskirk granite (Series B).
 See G.A.819.

G.A.1448 Lat. $41^{\circ}42'46''\text{S}$. Long. $145^{\circ}04'00''\text{E}$. Burnie.
 From white Heemskirk Granite (Series B).
 See G.A.819.

Ref: TAS 1, 2

K55/3 and

K55/5		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
G.A.818A	Total Rock	344	48.9	20.23	0.8346 (unsp.)
G.A.818B	"	344	49.8	19.66	0.8349 (unsp.)
G.A.823A	"	363	58.6	17.80	0.8197 (unsp.)
G.A.823B	"	365	58.7	17.90	0.8210 (unsp.)
G.A.827	"	437	13.3	94.40	1.1988
G.A.1195	"	457	27.1	48.41	0.9721
G.A.1440	"	411	12.0	98.67	1.2161
G.A.1441	"	431	13.3	93.51	1.1931
G.A.1442	"	295	50.9	16.67	0.8138
G.A.1444	"	355	59.4	17.18	0.8180
G.A.1445	"	371	55.5	19.21	0.8283
G.A.1449	"	372	17.7	60.40	1.0268
G.A.1450	"	347	65.8	15.18	0.8096
G.A.1451	"	394	61.0	18.54	0.8251

Age 352 ± 4 m.y. Initial Sr⁸⁷/Sr⁸⁶ $0.7341 \pm 0.002(I)$

Collected by C. Brooks.

G.A.818A,B. Lat. $41^{\circ}43'12''S$. Long. $145^{\circ}03'32''E$. Burnie.

From white Heemskirk Granite (Series A) South Tasman Creek. "Two error regression" analyses of results of white granite 'A' rocks indicates that geological variation may be present but is not likely. High initial Sr⁸⁷/Sr⁸⁶ attributed to crustal contamination of primary magma or to generation of magma from crustal source. K55/3

G.A.823A,B. Lat. $41^{\circ}44'20''S$. Long. $145^{\circ}04'12''E$. Burnie.

From white Heemskirk Granite (Series A) South Amy Creek. See G.A.818. K55/3

G.A.827 Lat. $41^{\circ}43'45''S$. Long. $145^{\circ}06'00''E$. Burnie.

From white Heemskirk Granite (Series A) Granite Creek. See G.A.818. K55/3

- G.A.1195 Lat. $41^{\circ}48'18''$ S. Long. $145^{\circ}08'58''$ E. Queenstown.
From white Heemskirk Granite (Series A) Mount
Agnew Zeehan. See G.A.818. Ref. K55/5
- G.A.1440 Lat. $41^{\circ}44'56''$ S. Long. $145^{\circ}07'15''$ E. Burnie.
From white Heemskirk Granite (Series A).
See G.A.818. Ref. K55/3.
- G.A.1441 Lat. $41^{\circ}46'00''$ S. Long. $145^{\circ}08'58''$ E. Queenstown.
From white Heemskirk Granite (Series A).
See G.A.818. Ref. K55/5.
- G.A.1442 Lat. $41^{\circ}43'38''$ S. Long. $145^{\circ}05'27''$ E. Burnie.
From white Heemskirk Granite (Series A).
See G.A.818. Ref. K55/3.
- G.A.1444 Lat. $41^{\circ}43'00''$ S. Long. $145^{\circ}06'38''$ E. Burnie.
From white Heemskirk Granite (Series A).
See G.A.818. Ref. K55/3.
- G.A.1445 Lat. $41^{\circ}42'40''$ S. Long. $145^{\circ}04'36''$ E. Burnie.
From white Heemskirk Granite (Series A).
See G.A.818. Ref. K55/3.
- G.A.1449 Lat. $41^{\circ}47'23''$ S. Long. $145^{\circ}07'40''$ E. Queenstown.
From white Heemskirk Granite (Series A).
See G.A.818. Ref. K55/5.
- G.A.1450 Lat. $41^{\circ}44'18''$ S. Long. $145^{\circ}04'12''$ E. Burnie.
From biotite-plagioclase xenolithic bleb in
Heemskirk Granite. See G.A.818. Ref. K55/3.
- G.A.1451 Lat. $41^{\circ}42'17''$ S. Long. $145^{\circ}06'10''$ E. Burnie.
From white Heemskirk Granite (Series A).
See G.A.818. Ref. K55/3.

Ref: TAS 3

K55/5

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
G.A.1127	Total Rock(1)	317	67.3	13.56	0.8033
	Total Rock(2)	317	65.5	13.93	0.8040
	Plagioclase	95.3	51.6	5.31	0.7610
	Orthoclase	544	78.0	20.5	0.8312
	Chlorite	112	8.29	39.00	0.9192
	Biotite	869	9.70	257.5	2.0122
G.A.1196					
	Total Rock	349	55.5	18.08	0.8432 (unsp.)
	Plagioclase	140	37.8	10.05	0.8071 (unsp.)
	Orthoclase	551	68.8	23.04	0.8607 (unsp.)
	Muscovite	734	15.5	136.6	1.3592
	Chlorite	198	10.2	55.68	0.8737
G.A.1202					
	Total Rock	355	53.3	18.88	0.8285 (unsp.)
	Plagioclase	97.9	28.5	9.88	0.7753 (unsp.)
	Orthoclase	502	76.2	18.93	0.7253 (unsp.)
	Biotite	1066	6.66	477.5	3.0743
G.A.1203					
	Total Rock	327	56.0	17.69	0.8211 (unsp.)
	Muscovite	748	11.3	190.0	1.6839
G.A.1204					
	Total Rock	314	68.5	13.18	0.8044 (unsp.)
	Plagioclase	65.5	21.2	8.87	0.7678 (unsp.)
	Orthoclase	434	64.8	19.24	0.8138 (unsp.)
	Chlorite	185	16.6	31.93	0.8826
	Biotite	1028	12.9	228.8	1.8475
G.A.1504					
	Total Rock	321	55.3	16.69	0.8156 (calc)
					0.8146 (unsp.)
G.A.1505					
	Total Rock	353	66.3	15.35	0.8060

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
G.A. 1506	Total Rock	365	80.5	13.05	0.7912 (calc.) 0.7926 (unsp.)
G.A. 1507	Total Rock	329	62.1	15.22	0.8088 (calc.) 0.8088 (unsp.)

Rb-Sr age : 356 ± 9 m.y.

Initial Sr⁸⁷/Sr⁸⁶ 0.7354 ± 0.0018 (I).

Collected by C. Brooks.

- G.A. 1127 Adamellite from the Pieman Granite.
Age of emplacement relates the Pieman Granite to the Tabberabberan Orogeny.
- G.A. 1196 - From the Pieman Granite. Age of emplacement
G.A. 1203 relates the Pieman Granite to the
Tabberabberan Orogeny.
- G.A. 1204 Adamellite from Pieman Granite.
G.A. 1504 " " " "
G.A. 1505 - From the Pieman Granite.
G.A. 1506
G.A. 1507 Adamellite from Pieman Granite.

Ref: TAS 3

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
K55/6					
G.A. 1213	Total Rock	223	143	4.476	0.7367 (unsp.)
	Plagioclase	103	181	1.626	0.7234
	Orthoclase	391	169	6.646	0.7490 (unsp.)
	Biotite	636	5.99	305.2	2.2163

Rb-Sr age : 353 ± 7 m.y.

Initial Sr⁸⁷/Sr⁸⁶ 0.7155 ± 0.0015 .

From the Meredith Granite.

Collected by C. Brooks.

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
Bischoff Porphyry		938	9.09	296.9	2.1528

Age : 349 ± 4 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7155 ± 0.0015 (I).

From the Bischoff Porphyry. Collected by C. Brooks.

Initial Sr⁸⁷/Sr⁸⁶ is that given by G.A. 1213.

Agreement of age with G.A. 1213 suggests that the Meredith Granite caused the Mount Bischoff mineralization.

Ref: TAS 3
K55/5
G.A. 1197

Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
1204	7.84	442.0	2.8807

Age : 355 ± 4 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.70 (A).

From the Renison Bell Porphyry.

Collected by C. Brooks. Age relates the Renison Bell mineralization to the Tabberabberan Orogeny.

Ref: TAS 3
K55/5
G.A. 1198

	Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
Total Rock	85.2	163	1.502	0.7241 (unsp.)
Plagioclase	223	274	2.337	0.7300 (unsp.)
Hornblende/ pyroxene	7.10	22.2	0.919	0.7205 (unsp.)

Rb-Sr age : 518 ± 133 m.y.

Initial Sr⁸⁷/Sr⁸⁶ 0.7132 ± 0.0031 (I).

From the McIvors Hill Gabbro.

Collected by C. Brooks. Results suggest that this basic intrusion occurred prior to the Tabberabberan Orogeny in the Cambrian.

Ref: TAS 3
K55/5
G.A. 1205

	Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
Total Rock	292	74.2	11.33	0.7938 (unsp.)
Plagioclase	65.7	56.3	3.32	0.7597 (unsp.)
Orthoclase	419	92.3	13.05	0.7991 (unsp.)
Biotite	1050	12.1	250.1	2.0015

Rb-Sr age : Total Rock 301 ± 46 m.y.

Biotite, 364 ± 4 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7354 ± 0.0018 (I). Adamellite from the Pieman Granite.

Collected by C. Brooks. Age of emplacement.

Relates the Pieman Granite to the Tabberabberan Orogeny.

TERRITORY OF PAPUA AND NEW GUINEA

Ref: T.P.N.G. (Unpublished)

B55/15/2

G.A. 5416

Hornblende, K-Ar age : 55 m.y.

% K	$^{40}\text{Ar}/^{40}\text{K}$	% ^{40}Ar
0.196	3.285×10^{-3}	68.0

Diorite from Papuan Ultrabasic Belt, 300
yards south of Kui, T.P.N.G.

Salamaua 1:250,000. Long. $147^{\circ}13'\text{E}$.

Lat. $7^{\circ}29'\text{S}$. Age is reliable, assuming
negligible metamorphism. Submitted by H.L.
Davies.

Ref: T.P.N.G. (Unpublished)

B56/12

G.A. 5435

Biotite, K-Ar age : 5.1 m.y.; 5.3 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
7.084)	7.07	2.961×10^{-4}	74.6
7.056)		3.116×10^{-4}	42.1

Granodiorite, Keita District.

Lat. $6^{\circ}25\frac{1}{2}'\text{S}$. Long. $155^{\circ}42'\text{E}$.

Bougainville Island South 1:250,000.

Submitted by D.H. Blake.

VICTORIA

Ref: VIC 1

J54/6

G.A. 1017

Whole Rock, K-Ar age : 0.81 m.y., 0.81 m.y., 0.83 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
1.092)	1.094	0.474×10^{-4}	44.9
1.096)		0.471×10^{-4}	51.9
		0.483×10^{-4}	48.2

Olivine basalt. Albion quarry, Alphington, near Melbourne. Ringwood 1:50,000 map (No. 7922-111), 069E, 412N. Collected by I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J55/5

G.A. 1018

Whole Rock, K-Ar age : 4.68 m.y., 4.46 m.y., 4.52 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.970)	0.971	2.80×10^{-4}	19.4
0.972)		2.61×10^{-4}	19.0
		2.65×10^{-4}	26.7

Olivine basalt. Fowler's quarry, off Keilor Rd., Essendon, near Melbourne. Sunbury 1:63,360 map (No. 839, Zone 7), 918E, 457N. Collected by I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J55/5

G.A. 1019

Whole Rock, K-Ar age : 2.63 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.759)	0.760	1.542×10^{-4}	79.8
0.760)			

Olivine basalt. McGrath's quarry, Braybrook, near Melbourne. Melbourne 1:63,360 map (No. 848, Zone 7), 891E, 415N. Collected by I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J55/5

G.A. 1020

Whole Rock, K-Ar age : 2.55 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.747)	0.750	1.49×10^{-4}	83.7
0.752)			

Olivine basalt. Albion quarry, Sunshine. Melbourne 1:63,360 map (No. 848, Zone 7), 860E, 413N. Collected by I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J55/5

G.A. 1021

Whole Rock, K-Ar age : 2.49 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.743)			
0.743)	0.743	1.457×10^{-4}	83.2

Olivine basalt, Newport quarry, Melbourne.

Melbourne 1:63,360 map (No. 848, Zone 7), 915E, 332N. Collected by I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J54/8

G.A. 1023

Whole Rock, K-Ar age : 2.57 m.y., 2.49 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
1.306)			
1.307)	1.306	1.500×10^{-4}	38.2
		1.458×10^{-4}	48.5

Olivine basalt. Small disused quarry 1 km S. of Dunnstown, 10 km E.S.E. of Ballarat.

Ballarat 1:63,360 map (No. 836, Zone 7), 034E, 608N. Collected by I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J54/6

G.A. 1060

Whole Rock, K-Ar age : 0.81 m.y., 0.77 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
1.128)			
1.132)	1.130	0.475×10^{-4}	88.8
		0.448×10^{-4}	57.6

Olivine basalt. Albion quarry, Alphington, near Melbourne. Ringwood 1:50,000 map (No. 1922-111), 069E, 412N. Collected by I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J55/5

G.A. 1061

Whole Rock, K-Ar age : 2.16 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.720)			
0.722)	0.721	1.264×10^{-4}	47.7

Olivine basalt. Merri Creek quarry, Melbourne. Melbourne 1:63,360 map (No. 848, Zone 7), 023E, 414N. Collected by I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J55/5

G.A. 1062

Whole Rock, <u>K-Ar age : 4.42 m.y., 4.45 m.y., 4.52 m.y.</u>			
% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.876)	0.877	2.59×10^{-4}	25.3
0.878)		2.60×10^{-4}	55.0
		2.58×10^{-4}	24.8

Olivine basalt. Fowler's quarry, off Keilor Road, Essendon, near Melbourne. Sunbury 1:63,360 map (No. 839, Zone 7), 918E, 457N. Collected by I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J54/12

G.A. 1064

Whole Rock, <u>K-Ar age : 0.56 m.y.</u>			
% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
1.125)	1.126	0.325×10^{-4}	71.6
1.127)			

Alkali olivine basalt. Framlingham quarry, 4.2 km N.N.W. of Panmure. Panmure 1:63,360 map, 632E, 761N. Collected by I. McDougall, H.L. Allsopp, and F.H. Chamalaun.

Ref: VIC 1

J54/7

G.A. 1065

Whole Rock, <u>K-Ar age : 3.95 m.y., 3.88 m.y.</u>			
% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
1.158)	1.160	2.31×10^{-4}	49.3
1.162)		2.28×10^{-4}	66.1

Olivine basalt. Menzel's quarry, Hamilton, western Victoria. Penhurst 1:63,360 map, 015E, 421N. Collected by I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J54/8

G.A. 1066

Whole Rock, <u>K-Ar age : 3.59 m.y.</u>			
% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.582)	0.583	2.11×10^{-4}	86.9
0.584)			

Olivine basalt. Ararat quarry, western Victoria. Ballarat 1:253,440 map, 593E, 395N.

Ref: VIC 1

J55/5

G.A. 1115

Whole Rock, K-Ar age : 2.50 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.728)	0.730	1.464×10^{-4}
0.732)		
		90.1

Olivine basalt. Newport quarry, Melbourne.

Melbourne 1:63,360 map (No. 848, Zone 7), 915E, 332N. Collected by I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J54/6

G.A. 1116

Whole Rock, K-Ar age : 0.81 m.y., 0.82 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
1.127)	1.124	0.471×10^{-4}
1.121)		
		53.7
		0.479×10^{-4}
		40.5

Olivine basalt. Albion quarry, Alphington,

near Melbourne. Ringwood 1:50,000 map (No.

7922-111), 069E, 412N. Collected by J. Briden.

Ref: VIC 1

J54/7

G.A. 1141

Whole Rock, K-Ar age : 4.35 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.717)	0.717	2.54×10^{-4}
0.718)		
		33.3

Olivine basalt. Grange Burn, about 5 km W. of

Hamilton, western Victoria. Collected by

I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J55/5

G.A. 1171

Whole Rock, K-Ar age : 2.23 m.y.

% K	$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.812)	0.815	1.307×10^{-4}
0.818)		
		61.3

Olivine basalt. Merri Creek quarry, Melbourne.

Melbourne 1:63,360 map (No. 848, Zone 7), 023E,

414N. Collected by I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J54/12

G.A. 1172

Whole Rock, K-Ar age : 0.586 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
1.094)	1.093	0.342×10^{-4}	75.8
1.091)			

Alkali olivine basalt. Framlingham quarry,
4.2 km N.N.W. of Panmure. Panmure 1:63,360
map, 632E, 761N. Collected by I. McDougall,
H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J55/5

G.A. 1173

Whole Rock, K-Ar age : 2.74 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.662)	0.664	1.61×10^{-4}	90.4
0.666)			

Olivine basalt. Albion quarry, Sunshine.
Melbourne 1:63,360 map (No. 848, Zone 7), 860E,
413N. Collected by I. McDougall, H.L. Allsopp
and F.H. Chamalaun.

Ref: VIC 1

J54/8

G.A. 1174

Whole Rock, K-Ar age : 3.52 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
0.646)	0.647	2.06×10^{-4}	86.1
0.648)			

Olivine basalt. Ararat quarry, western Victoria.
Ballarat 1:253,440 map, 593E, 395N. Collected by
I. McDougall, H.L. Allsopp and F.H. Chamalaun.

Ref: VIC 1

J54/8

G.A. 2095

Whole Rock, K-Ar age : 3.87 m.y., 3.93 m.y.

% K		$^{40}\text{Ar}^*/^{40}\text{K}$	% $^{40}\text{Ar}^{\text{atm}}$
1.560)	1.560	2.26×10^{-4}	19.7
1.561)		2.30×10^{-4}	20.3

Olivine basalt. Operating quarry 1.4 km E. of
Dunnstown, 11 km E.S.E. of Ballarat.
Ballarat 1:63,360 map (No. 836, Zone 7), 048E,
617N. Collected by I. McDougall, H.L. Allsopp
and F.H. Chamalaun.

WESTERN AUSTRALIA

Ref: W.A. 1		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/09/35	Total rock	103.7	358.5	0.831	0.7367 (calc.)
G.A. 5114					0.7360 (meas.)

Age: 3049 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7000 (A)

Collected by V.M. Bofinger.

Mount Ramsay. Lat. 18°30'33"S. Long. 126°39'10"E.

Leucogranite as veins and dykes cutting the Violet Valley Tonalite.

Apparent age too great. May reflect metasedimentary parent.

Ref: W.A. 1		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/09/27					
G.A. 5106	(1) Total rock A	199.2	51.6	11.091	1.1325
	(2) Total rock B	201.1	51.5	11.236	1.1327
	(3) Muscovite	1464.5	1.9	2180.102	54.5432

Age: (1) & (2) 2718 m.y. Initial Sr⁸⁷/Sr⁸⁶ : 0.7000(A)

(3) 1755 m.y. Initial Sr⁸⁷/Sr⁸⁶ : 0.7000(A)

Collected by V.M. Bofinger.

Mount Ramsay. Lat. 18°55'00"S. Long. 127°14'00"E.

Pegmatite intruding Halls Creek Group.

(1), (2) age of intrusion of pegmatite

(3) age of metamorphism

Ref: W.A. 1	Pyroxene.	<u>K-Ar age : (1) 2696 m.y. (2) 2766 m.y.</u>		
E52/2/25	%K	⁴⁰ Ar*/ ⁴⁰ K	% ⁴⁰ Ar ^{atm}	
G.A. 971	(1) 0.048	350.2 x 10 ⁻³	7.4	
	(2) 0.048	367.48 x 10 ⁻³	6.2	

Dolerite.

Lat. 16°29'S. Long. 128°03'E. Lissadell.

Collected by V.M. Bofinger.

Ref: W.A. 1	Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/06/06	Total rock	40.7	182.8	0.641
G.A. 1103				0.7210 (meas.)

Age: 2320 m.y. Initial Sr⁸⁷/Sr⁸⁶ : 0.7000 (A)
 Collected by V.M. Bofinger.
 Dixon Range. Lat. 17°14'15"S. Long. 128°05'10"E.
 Dolerite intruding Lamboo Complex.
 Age of intrusion of dolerite.

Ref: W.A. 1 Rbμg/g Srμg/g Rb⁸⁷/Sr⁸⁶ Sr⁸⁷/Sr⁸⁶
E52/09/25 Total rock 278.5 11.5 69.364 2.9054
G.A. 5104

Age: 2251 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7000 (A)
Collected by V.M. Bofinger.
Mount Ramsay. Lat. 18°49'15"S. Long. 127°16'50"E.
Pegmatite intruding Saunders Creek Formation.
Age of intrusion of pegmatite.

Ref: W.A. 1 Rb μ g/g Sr μ g/g Rb⁸⁷/Sr⁸⁶ Sr⁸⁷/Sr⁸⁶
E52/10/06 Total rock 95.3 34.3 7.986 0.9308
G.A. 5057
Age: 2050 m.y. Initial Sr⁸⁷/Sr⁸⁶ : 0.7000 (A)
Collected by V.M. Bofinger.
Gordon Downs. Lat. 18°05'55"S. Long. 127°57'45"E.
Rhyolite from Ding Dong Downs Formation.
Minimum age only.

Ref: W.A. 1
E52/06/33 Total rock
G.A. 5068

	Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
Total rock	37.5	127.2	0.847	0.7262 (calc.)
G.A. 5068				0.7245 (meas.)

Age: 1968 m.y. Initial Sr⁸⁷/Sr⁸⁶ : 0.7000 (A)
Collected by V.M. Bofinger.
Dixon Range. Lat. 17°02'58"S. Long. 128°16'35"E.
Graphic pegmatite associated with gneissic Mabel Downs Granite.
Age of intrusion of pegmatite.

Ref: W.A. 1		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/06/55	Total rock	163.2	65.1	7.207	0.8840
G.A. 5223					

Age: 1813 m.y. Initial Sr⁸⁷/Sr⁸⁶ : 0.7000 (A)
 Collected by V.M. Bofinger.
 Dixon Range. Lat. 17°59'55"S. Long. 127°48'55"E.
 Rhyolite dyke (Bbr) intruding Lamboo Complex.
 Age of intrusion of rhyolite.

Ref: W.A. 1		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/06/21	Total rock	178.6	55.4	9.274	0.9364
G.A. 968					

Age: 1811 m.y. Initial Sr⁸⁷/Sr⁸⁶ : 0.7000 (A)
 Collected by V.M. Bofinger.
 Dixon Range. Lat. 17°56'55"S. Long. 127°47'05"E.
 Rhyolite intruding Bow River Granite.
 Age of intrusion of rhyolite.

Ref: W.A. 1		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/10/19					
G.A.5232 A	Total rock	138.7	62.0	6.432	0.8822 (calc.) 0.8803 (meas.)
G.A.5232 B	Total rock	380.7	36.9	24.677	1.4292 (calc.) 1.4264 (meas.)
G.A.5232 C	Total rock	429.5	32.7	37.761	1.6310

Age: 1705 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7250 (A)
 Collected by V.M. Bofinger
 Gordon Downs. Lat. 18°20'15"S. Long. 127°50'05"E.
 Shale from Olympio Formation.
 Possible age of metamorphism.

Ref: W.A. 1

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/09/23					
G.A. 5102 B	Total rock	367.3	29.5	35.781	1.4038

Age: 1400 m.y. Initial Sr⁸⁷/Sr⁸⁶ : 0.701 (A)

Collected by V.M. Bofinger.

Mount Ramsay. Lat. 18°51'15"S. Long. 127°14'15"E.

Shale from Moola Bulla Formation.

Apparent age only. Unrelated to other data.

Ref: W.A. 1

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/9/23					
G.A. 5102 A	Total rock	351.3	25.6	40.146	1.3812
G.A. 5102 C	Total rock	441.4	35.6	35.659	1.3448

Age: 581 m.y. Initial Sr⁸⁷/Sr⁸⁶ 1.0557 (I)

Collected by V.M. Bofinger.

Mount Ramsay. Lat. 18°51'15"S. Long. 127°14'15"E.

Shale from Moola Bulla Formation.

Possible age of metamorphism.

Ref: W.A.1

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/10/04					
G.A. 5055	Total rock	145.1	38.8	10.751	0.9250

E52/10/07

G.A. 5058	Total rock	267.8	32.0	24.042	1.2192
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E52/02/03

G.A. 1239 (1)	Plagioclase	14.8	413.5	0.103	0.7030 (calc.) 0.7038 (meas.)
(2)	Biotite	426.0	5.8	210.323	6.4527 (calc.)

Age: 1537 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7000 (A)

Collected by V.M. Bofinger.

G.A. 5055 Gordon Downs. Lat. 18°04'02"S. Long. 127°55'58"E.

Sodic rhyolite intruding the Biscay Formation.

Lies on isochron. Indicates age of intrusion.

G.A.5058 Gordon Downs. Lat. $18^{\circ}02'00''\text{S}$. Long. $127^{\circ}57'30''\text{E}$.
Alkali microgranite intruding the Biscay Formation.
Lies on isochron. Indicates age of intrusion.

G.A.1239 Lissadell. Lat. $16^{\circ}23'00''\text{S}$. Long. $128^{\circ}28'05''\text{E}$.
Biotite hornblende quartz dolerite intruding the
Halls Creek Group.
Age of intrusion of dolerite.

Ref: W.A. 1

		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
D52/14/02					
G.A. 1106	Total rock	136.5	239.5	1.638	0.7213

Age: 929 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7000 (A)

Collected by V.M. Bofinger.

Cambridge Gulf. Lat. $15^{\circ}48'55''\text{S}$. Long. $128^{\circ}30'20''\text{E}$.
Dolerite intruding O'Donnell Formation.

Apparent age of intrusion of dolerite.

		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/02/37 (1)	Total rock	56.0	374.3	0.430	0.7124 (meas.)
G.A. 1101 (2)	K-feldspar	206.8	629.5	0.945	0.7312 (meas.)
	(3) Biotite	523.6	9.5	158.563	3.734 (calc.)
E52/02/10 (1)	Total rock	14.8	210.1	0.203	0.7096
G.A. 1099 (2)	Biotite	383.0	11.6	95.013	3.4796
E52/06/02 (1)	Total rock	15.6	147.9	0.304	0.7065 (meas.)
G.A. 1102 (2)	Biotite	360.9	5.0	206.865	5.8313 (calc.)
E52/06/44	Total rock	129.4	140.0	2.656	0.7747 (calc.)
G.A. 5079					
E52/06/43	Total rock	59.4	666.8	0.256	0.7088 (calc.)
G.A. 5078					
E52/06/24	K-feldspar	257.8	442.6	1.674	0.7537 (calc.)
G.A. 1367					0.7529 (meas.)
1093					

		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/06/26	(1) Total rock	31.9	182.9	0.502	0.7138
G.A. 959	(2) Biotite	412.9	15.7	75.813	2.5639
E52/02/24	(1) Total rock	198.8	129.1	4.426	0.8240
G.A. 970	(2) K-feldspar	384.2	274.7	4.021	0.8182
	(3) Biotite	953.2	4.6	595.541	14.2850
E52/06/16	(1) Total rock	173.3	103.0	4.839	0.8321
G.A. 976	(2) Biotite	823.1	3.4	699.889	11.2762
E52/02/27	(1) Total rock	183.0	83.2	6.324	0.8749
G.A. 975	(2) K-feldspar	386.7	215.4	5.162	0.8440
	(3) Biotite	928.8	2.6	1041.648	24.7698

Collected by V.M. Bofinger

[illegible]

(2) 2067 ± 29 m.y.

(3) 1364 m.y. 1364 m.y.

Lissadell. Lat. $16^{\circ}58'00''S$. Long. $128^{\circ}14'00''E$.

Hypersthene biotite granulite from Tickalara Metamorphics.

(1) lies on isochron within experimental error.

Represents real age of metamorphism.

(2) lies on altered material isochron. Apparent age only and suggests loss of Rb.

(3) apparent age only. Unrelated.

G.A. 1099 Age: (1) 1963 ± 46 m.y. Initial Sr⁸⁷/Sr⁸⁶

(1) 0.7017 ± 0.0016 (I)

(2) 0.703 (A)

(2) 2067 ± 29 m.y.

Lissadell. Lat. $16^{\circ}59'55''S$. Long. $128^{\circ}14'00''E$.

Garnet gneiss from Tickalara Metamorphics.

(1) lies on isochron just outside experimental error.

Indicates age of metamorphism. Also lies on altered material isochron with an apparent age, 2067 m.y. suggesting loss of Rb.

(2) lies on altered material isochron and suggests loss of Rb.

[illegible]

(2) 1762 m.y.

Dixon Range. Lat. $17^{\circ}17'45''\text{S}$. Long. $128^{\circ}03'00''\text{E}$.

Orthogneiss granulite from Tickalara Metamorphics.

(1) lies on isochron outside experimental error.

Indicates age of metamorphism.

(2) apparent age only. Unrelated.

G.A. 5079 Age: 1961 ± 27 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ $0.7010 \pm 0.0006(\text{I})$

Dixon Range. Lat. $17^{\circ}58'30''\text{S}$. Long. $127^{\circ}48'05''\text{E}$.

Biotite granulite from Tickalara Metamorphics.

Lies on isochron within experimental error.

Indicates age of metamorphism.

G.A. 5078 Age: 1961 $\pm$ 27 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ $0.7010 \pm 0.0006(\text{I})$

Dixon Range. Lat. $17^{\circ}58'30''\text{S}$. Long. $127^{\circ}48'05''\text{E}$.

Tickalara Metamorphics.

Lies on isochron within experimental error.

Indicates age of metamorphism.

G.A. 1367 Age: 1963 $\pm$ 46 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7017 $\pm$ 0.0016(I)

Dixon Range. Lat. $17^{\circ}10'25''\text{S}$. Long. $128^{\circ}08'25''\text{E}$.

Granite from Tickalara Metamorphics.

Lies on isochron just outside experimental error.

Indicates age of metamorphism. Also lies on

altered material isochron of 2067 ± 29 m.y. which

is an apparent age suggesting loss of Rb.

G.A. 959

Age: (1) 1961 ± 27 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) 0.7010 ± 0.0006 (I)
 (2) 1747 m.y. (2) 0.70 (A)

Dixon Range. Lat. $17^{\circ}13'40''\text{S}$. Long. $127^{\circ}59'20''\text{E}$.

Pyroxene granulite from Tickalara Metamorphics.

(1) lies on isochron within experimental error.

Indicates age of metamorphism.

(2) apparent age only. Unrelated.

G.A. 970

Age: (1) 1961 ± 27 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) 0.7010 ± 0.0006 (I)
 (2) 2067 ± 29 m.y. (2) 0.703 (A)
 (3) 1681 ± 63 m.y. (3) 0.7024 (I)

Lissadell. Lat. $16^{\circ}52'20''\text{S}$. Long. $128^{\circ}16'20''\text{E}$.

Granite gneiss from Tickalara Metamorphics.

(1) lies on isochron within experimental error.

Indicates age of metamorphism.

(2) represents an apparent age; lies on altered material isochron and suggests loss of Rb.

(3) represents an age of secondary metamorphism.

Lies on altered material isochron.

G.A. 976

Age: (1) 1963 ± 46 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) 0.7017 ± 0.0016 (I)
 (2) 1038 m.y. (2) 0.8674 (I)

Dixon Range. Lat. $17^{\circ}16'50''\text{S}$. Long. $128^{\circ}03'02''\text{E}$.

Garnet biotite granite from Tickalara Metamorphics.

(1) lies on isochron just outside experimental error.

Indicates age of metamorphism.

(2) lies on altered material isochron. Represents age of secondary metamorphism.

G.A. 975

Age: (1) 1961 ± 27 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) 0.7010 ± 0.0006 (I)
 (2) 1961 ± 27 m.y. (2) 0.7010 ± 0.0006 (I)
 (3) 1681 ± 63 m.y. (3) 0.7024 (I)

Lissadell. Lat. $16^{\circ}52'40''\text{S}$. Long. $128^{\circ}17'00''\text{E}$.

Garnet cordierite biotite gneiss from Tickalara Metamorphics.

(1) & (2) lie on isochron within experimental error.

Indicate age of metamorphism.

(3) lies on altered material isochron. Represents an age of secondary metamorphism.

Ref: W.A. 1

		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/02/04					
G.A. 1098	(1) Total rock	127.3	256.4	1.428	0.7395
	(2) Biotite	358.1	1.1	938.516	22.6064
E52/02/14	(1) Total rock	132.3	246.8	1.564	0.7453
G.A. 1100	(2) Biotite(A)	466.1	5.3	250.819	4.5340
	(3) Biotite(B)	473.7	5.1	266.604	4.8329
E52/06/39	Total rock	135.0	354.9	1.094	0.7317 (calc.)
G.A. 5074					0.7313 (meas.)
E52/09/18	Total rock	125.2	152.5	2.360	0.7655 (calc.)
G.A. 5097					
E52/06/19	(1) Total rock	440	575.0	0.220	0.7082
G.A. 957	(2) Biotite	291.2	21.8	38.417	1.1719
E52/06/13	(1) Total rock	28.7	741.1	0.111	0.7052
G.A. 969	(2) Biotite	239.0	21.9	31.374	1.5147
E52/02/13	(1) Total rock	124.2	245.2	1.456	0.7423
G.A. 973	(2) Biotite	698.2	14.1	142.331	2.4671

Collected by V.M. Bofinger

[illegible]

Lissadell. Lat. $16^{\circ}47'15''\text{S}$. Long. $128^{\circ}22'50''\text{E}$.

Biotite granite from Mabel Downs Granite.

- (1) lies on isochron within experimental error.

Indicates age of intrusion of mass.

- (2) apparent age only. Unrelated.

G.A. 1100 Age: (1) 1961 $\pm$ 27 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) 0.7010 $\pm$
0.0006 (I)
(2) 1067 $\pm$ 26 m.y. (2) 0.788 (I)

Lissadell. Lat. $16^{\circ}51'55''\text{S}$. Long. $128^{\circ}17'05''\text{E}$.

Gneissic granodiorite from Mabel Downs Granite.

- (1) lies on isochron within experimental error.

Indicates age of intrusion of mass.

- (2) lies on altered material isochron. Represents age of secondary metamorphism.

G.A. 5074 Age: 1961 ± 27 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ $0.7010 \pm 0.0006(\text{I})$

Dixon Range. Lat. $17^{\circ}12'00''\text{S}$. Long. $128^{\circ}17'15''\text{E}$.

Granodiorite from Mabel Downs Granite.

Lies on isochron within experimental error.

Indicates age of intrusion.

G.A. 5097 Age: 1961 $\pm$ 27 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7010 $\pm$ 0.006(I)

Mount Ramsay. Lat. $18^{\circ}31'15''\text{S}$. Long. $127^{\circ}00'20''\text{E}$.

Granite aplite from Mabel Downs Granite.

Lies on isochron within experimental error.

Indicates age of intrusion.

G.A. 957 Age:(1) 1961 ± 27 m.y. Initial Ratio (1) $0.7010^{+0.0006}$ (I)
 (2) 878 m.y. (2)0.7000 (A)

Dixon Range. Lat. $17^{\circ}03'35''\text{S}$. Long. $128^{\circ}14'35''\text{E}$.

Granodiorite from Mabel Downs Granite.

- (1) lies on isochron within experimental error.

Indicates age of intrusion.

- (2) apparent age only. Inrelated.

G.A. 969

Age: (1) 1961 ± 27 m.y. Initial Ratio (1) 0.7010 ± 0.0006 (I)
 (2) 1844 m.y. (2) 0.7000 (A)

Dixon Range. Lat. $17^{\circ}28'00''$ S. Long. $128^{\circ}07'58''$ E.

Granodiorite from Mabel Downs Granite.

(1) lies on isochron inside experimental error.

Indicates age of intrusion.

(2) apparent age only. Unrelated.

G.A. 973

Age:(1) 1961 ± 27 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) 0.7010 ± 0.0006 (I)
 (2) 887 m.y. (2) 0.7000 (A)

Lissadell. Lat. $16^{\circ}54'10''$ S. Long. $128^{\circ}11'00''$ E.

Epidote-biotite granodiorite from Mabel Downs Granite.

(1) lies on isochron within experimental error.

Indicates age of intrusion of rock.

(2) apparent age only. Unrelated.

		Rb μ g/g	Sr μ g/g	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/6/46	Total rock	53.6	595.9	0.259	0.7097 (calc.)
G.A. 5150					0.7060 (meas.)
E52/6/25	(1) Total Rock	711.0	291.1	1.096	0.7344
G.A. 958	(2) Biotite	430.6	4.7	265.327	4.3072

G.A. 5150

Age: 1963 m.y. ± 46 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7017 ± 0.0016 (I)

Dixon Range. Lat. $17^{\circ}31'10''$ S. Long. $127^{\circ}56'45''$ E.

Granodiorite from Mabel Downs Granite.

Lies on isochron within experimental error.

Indicates age of intrusion.

G.A. 958

Age:(1) 1963 ± 46 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) 0.7017 ± 0.0016 (I)
 (2) 971 m.y. (2) 0.7000 (A)

Dixon Range. Lat. $17^{\circ}08'06''$ S. Long. $128^{\circ}01'20''$ E.

Biotite granite from Violet Valley Tonalite.

(1) lies on isochron just outside experimental error.

Indicates age of intrusion. Also lies on altered

Ref: W.A. 1

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/02/05 (1)	Total rock	219.6	106.6	5.924	0.8646
G.A. 1085 (2)	K-feldspar	346.3	75.1	13.251	1.0149
E52/02/09 (1)	Total rock	275.3	108.4	7.297	0.8870
G.A. 1086 (2)	K-feldspar	445.4	41.6	31.200	1.2584
E52/02/01 (1)	Total rock	84.4	383.2	0.663	0.7234 (meas.)
G.A. 1097 (2)	K-feldspar	373.9	150.7	7.137	0.8786 (calc.)
E52/02/26					
G.A. 974	Total rock	167.7	205.5	2.345	0.7704
E52/02/16 (1)	K-feldspar A502.7		165.2	8.747	0.9235
G.A. 1242 (2)	K-feldspar B508.6		166.9	8.761	0.9286
E52/09/32					
G.A. 5111	Total rock	37.5	83.9	1.287	0.7318 (calc.)
					0.7315 (meas.)

Collected by V.M. Bofinger

G.A. 1085 Age: (1) 1871 $\pm$ 28 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}(1)$ 0.7019 $\pm$
0.0028(I)

(2) 1681 ± 63 m.y. (2) 0.7024

Lissadell. Lat. $16^{\circ}01'05''S$. Long. $128^{\circ}47'00''E$.

Graphic adamellite from Bow River Granite.

(1) lies on isochron just outside experimental error.

Indicates age of intrusion.

(2) lies on altered material isochron. Apparent age which suggests loss of Sr^{87*}

G.A. 1086 Age: (1) $\underline{1871 \pm 28 \text{ m.y.}}$ Initial Sr⁸⁷/Sr⁸⁶
 (1) 0.7019 ± 0.0028 (I)
 (2) $\underline{1067 \pm 26 \text{ m.y.}}$ (2) 0.7888 (I)

Lissadell. Lat. $16^{\circ}53'00''S$. Long. $128^{\circ}04'00''E$.

Porphyritic granite from Bow River Granite.

(1) lies on isochron just outside experimental error.
Indicates age of intrusion.

(2) lies on altered material isochron. Apparent age only which suggests loss of Sr^{87*}

G.A. 1097

Age: (1) 1871 ± 28 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$

$$(1) \ 0.7019 \pm 0.0028 \text{ (I)}$$

(2) 1681 ± 63 m.y.

(2) 0.7024

Lissadell. Lat. $16^{\circ}59'55''\text{S}$. Long. $128^{\circ}12'05''\text{E}$.

Granodiorite from Bow River Granite.

(1) lies on isochron just outside experimental error.

Indicates age of intrusion.

(2) lies on altered material isochron. Apparent age only which suggests loss of Sr^{87*}

G.A. 974

Age: 1871 ± 28 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ $0.7019 \pm$

0.0028 (I)

Lissadell. Lat. $16^{\circ}57'00''\text{S}$. Long. $128^{\circ}07'10''\text{E}$.

Bow River Granite.

Lies on isochron just outside experimental error.

Indicates age of intrusion.

G.A. 1242

Age: 1871 ± 28 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ $0.7019 \pm$

0.0028 (I)

Lissadell. Lat. $16^{\circ}02'00''\text{S}$. Long. $128^{\circ}52'00''\text{E}$.

Porphyroblastic granite from Bow River Granite.

Lies on isochron just outside experimental error.

Indicates age of intrusion.

G.A. 5111

Age: 1871 ± 28 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ $0.7019 \pm$

0.0028 (I)

Mount Ramsay. Lat. $18^{\circ}31'15''\text{S}$. Long. $126^{\circ}20'45''\text{E}$.

Leucogranite - vein material.

Lies on isochron just outside experimental error.

Indicates age of intrusion.

Ref: W.A. 1

Rb $\mu\text{g/g}$ Sr $\mu\text{g/g}$ Rb⁸⁷/Sr⁸⁶ Sr⁸⁷/Sr⁸⁶

E52/06/38

G.A. 5073	Total rock	195.6	427.7	1.314	0.7229 (calc.)
					0.7317 (meas.)

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/02/19	(1) Total rock	302.0	69.6	12.473	0.9687
G.A. 954	(2) K-feldspar	575.2	107.1	15.444	1.0235
	(3) Biotite	150.7	15.2	28.445	1.3703
E52/02/29	(1) Total rock	296.5	65.8	12.949	1.0383
G.A. 963	(2) K-feldspar	551.7	94.5	16.788	1.1027
E52/02/18	(1) K-feldspar	415.6	74.4	16.067	1.0789
G.A. 1366	(2) Biotite	1481.2	8.5	499.577	11.1306
E52/10/17					
G.A. 5230	(1) Total rock	142.2	25.4	16.102	1.0762

Collected by V.M. Bofinger

G.A. 5073 Age: 1681 $\pm$ 63 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.70 (I)
Dixon Range. Lat. $17^{\circ}12'00''\text{S}$. Long. $128^{\circ}17'15''\text{E}$.
Granodiorite from Mabel Downs Granite.
Lies on altered material isochron. Apparent
age only.

G.A. 954

<u>Age:</u> (1) 1067 ± 26 m.y.	Initial $\text{Sr}^{87}/\text{Sr}^{86}$
	(1) 0.7888 (I)
(2) 1067 ± 26 m.y.	(2) 0.7888 (I)
(3) 1681 ± 63 m.y.	(3) 0.7024 (I)

Lissadell. Long. $16^{\circ}52'00''\text{S}$. Long. $128^{\circ}08'00''\text{E}$.

Porphyritic granite from Bow River Granite

(1) and (2) lies on altered material isochron.

Apparent age only; suggests loss of Sr^{87*}

(3) lies on altered material isochron.

Apparent age only suggests loss of Sr^{87*}

G.A. 963 Age: (1) 1854 ± 14 m.y. Initial Sr⁸⁷/Sr⁸⁶

(1) $0.7029 \pm 0.0015(I)$

(2) 1681 ± 63 m.y. (2) $0.7024(I)$

Lissadell. Lat. $16^{\circ}45'45''S$. Long. $128^{\circ}16'50''E$.

Porphyritic granite from Bow River Granite.

(1) lies on isochron inside experimental error.
Indicates age of intrusion.

(2) lies on altered material isochron. This gives
an apparent age unrelated to intrusion.

G.A. 1366

Age: (1) 1681 ± 63 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) 0.7024(I)
 (2) 1486 m.y.

Lissadell. Lat. $16^{\circ}44'02''\text{S}$. Long. $127^{\circ}55'00''\text{E}$.

Granodiorite from Bow River Granite.

(1) lies on altered material isochron. Apparent age
 which suggests loss of Sr^{87*}

(2) apparent age only. Unrelated.

G.A. 5230

Age: 1681 ± 63 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7024 (I)

Gordon Downs. Lat. $18^{\circ}10'55''\text{S}$. Long. $127^{\circ}49'35''\text{E}$.

From Sophie Downs Granite.

Lies on altered material isochron. Apparent age
 which suggests loss of Sr^{87*}

Ref: W.A. 1

		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/06/15					
G.A. 966	Total rock	65.4	457.1	0.411	0.7143
E52/06/18 (1)	Total rock	196.1	135.6	4.158	0.8118
G.A. 967 (2)	Biotite	742.9	5.5	388.788	7.4639
E52/02/07 (1)	Total rock	306.9	91.4	9.649	0.9569
G.A. 972 (2)	K-feldspar	596.4	90.2	19.018	1.1428
	(3) Muscovite	871.1	12.9	193.449	5.5573
E52/06/04 (1)	Total rock	49.7	557.5	0.257	0.7089
G.A. 1081 (2)	Biotite	305.1	11.8	74.413	2.7092
E52/02/08 (1)	K-feldspar A248.8	202.1	3.539	0.7949	
G.A. 1240 (2)	K-feldspar B245.4	202.8	3.479	0.8111	
	(3) Biotite	752.8	2.2	979.480	14.8740
E52/09/01 (1)	K-feldspar	610.6	18.7	93.800	2.6929
G.A. 1104 (2)	Biotite	246.7	4.1	173.171	4.5948
	(3) Muscovite	1035.4	2.9	1035.900	27.7629

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/10/08					
G.A. 5059	Total rock	231.8	102.9	6.473	0.8716
E52/10/10					
G.A. 5060	Total rock	253.4	108.7	6.702	0.8797

Collected by V.M. Bofinger

G.A. 966 Age: 1854 $\pm$ 14 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7029 $\pm$ 0.0015(I)
Dixon Range. Lat. 17 $^{\circ}$ 52'00"S. Long. 127 $^{\circ}$ 44'40"E.
Adamellite from Bow River Granite.
Lies on isochron within experimental error.
Indicates age of intrusion of mass.

G.A. 967 Age: (1) 1854 $\pm$ 14 m.y. Initial Sr⁸⁷/Sr⁸⁶
(1) 0.7029 $\pm$ 0.0015 (I)
(2) 1368 m.y.
Dixon Range. Lat. 17°13'30"S. Long. 128°00'35"E.
Porphyritic granite from Bow River Granite.
(1) lies on isochron within experimental error.
Indicates age of intrusion of mass.
(2) apparent age only. Unrelated.

G.A. 972 Age:(1) 1854 ± 14 m.y.. Initial Sr⁸⁷/Sr⁸⁶

(1) $0.7029 \pm 0.0015(I)$

(2) 1681 ± 63 m.y. (2) 0.7024

(3) 1784 m.y.

Lissadell. Lat. $16^{\circ}43'02''S$. Long. $128^{\circ}12'00''E$.

Muscovite biotite adamellite from Bow River Granite.

(1) lies on isochron within experimental error.
Indicates age of intrusion.

(2) lies on altered material isochron. Apparent
age only; suggests loss of Sr^{87*}

(3) apparent age only. Unrelated.

G.A. 1081

Age: (1) 1854 ± 14 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) $0.7029 \pm 0.0015(I)$ (2) 1871 ± 28 m.y.(2) $0.7019 \pm 0.0028(I)$ Dixon Range. Lat. $17^{\circ}51'50''S$. Long. $127^{\circ}44'05''E$.

Hornblende biotite tonalite from Bow River Granite.

(1) lies on isochron within experimental error.

Indicates age of intrusion.

(2) lies on isochron just outside experimental error.

G.A. 1240

Age: (1) & (2) 1854 ± 14 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) & (2) $0.7029 \pm 0.0015(I)$ (3) 1038 m.y.(3) $0.8674 (I)$ Lissadell. Lat. $16^{\circ}48'55''S$. Long. $128^{\circ}20'05''E$.

Biotite adamellite from Bow River Granite.

(1) & (2) lie on isochron inside experimental error.

Indicates age of intrusion.

(3) lies on altered material isochron. Apparent age only - suggests loss of Sr^{87*}

G.A. 1104

Age: (1) 1511 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (3) $0.702 \pm 0.0015(I)$ (2) 1600 m.y.(3) 1854 ± 14 m.y.Mount Ramsay. Lat. $18^{\circ}33'40''S$. Long. $127^{\circ}14'15''E$.

From Bow River Granite.

(1) & (2) apparent ages only. Unrelated.

(3) lies on isochron within experimental error.

Indicates age of intrusion.

G.A. 5059

Age: 1854 ± 14 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ $0.7029 \pm 0.0015(I)$ Gordon Downs. Lat. $18^{\circ}04'15''S$. Long. $127^{\circ}41'00''E$.

Porphyritic granite from Bow River Granite.

Lies on isochron inside experimental error.

Indicates age of intrusion.

G.A. 5060

Age: 1854 ± 14 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7029 ± 0.0015 (I)

Gordon Downs. Lat. $18^{\circ}04'40''\text{S}$. Long. $127^{\circ}40'55''\text{E}$.

From Bow River Granite.

Lies on isochron inside experimental error.

Indicates age of intrusion of mass.

Ref: W.A. 1

		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/10/02					
G.A. 5053	Total rock	106.9	40.6	7.576	0.8996
E52/10/03	Total rock A	107.2	30.6	10.083	0.9682
G.A. 5054	Total rock B	106.8			
E52/10/18					
G.A. 5231	Total rock	124.1	34.7	10.288	0.9733

Age: 1854 ± 14 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7029 ± 0.0015 (I)

Collected by V.M. Bofinger

Lie on isochron for group G.A. 966 to 5060
within experimental error. Indicate age of
intrusion of mass.

G.A. 5053 Gordon Downs. Lat. $18^{\circ}04'50''\text{S}$. Long. $127^{\circ}53'10''\text{E}$.
Granodiorite (granulitic) from Sophie Downs Granite.

G.A. 5054. Gordon Downs. Lat. $18^{\circ}05'45''\text{S}$. Long. $127^{\circ}53'00''\text{E}$.
From Sophie Downs Granite.

G.A. 5231 Gordon Downs. Lat. $18^{\circ}10'25''\text{S}$. Long. $127^{\circ}50'00''\text{E}$.
From Sophie Downs Granite.

Ref: W.A. 1

E52/6/53

G.A. 5221

Pyroxene, K-Ar age: 1729 m.y.

$\%K$	$\frac{^{40}Ar^*}{^{40}K}$	$\% ^{40}Ar^{atm}$
0.085	165.394×10^{-3}	38.4

Dolerite from McIntosh Gabbro.

Dixon Range. Lat. $17^{\circ}45'35''S$. Long. $127^{\circ}53'45''E$.

Collected by V.M. Bofinger.

Minimum value for age which reflects regional diastrophic event.

Ref: W.A. 1

E52/6/54

G.A. 5222

Pyroxene, K-Ar age: 1732 m.y.

$\%K$	$\frac{^{40}Ar^*}{^{40}K}$	$\% ^{40}Ar^{atm}$
0.165	165.923×10^{-3}	4.3

Dolerite from McIntosh Gabbro.

Dixon Range. Lat. $17^{\circ}45'35''S$. Long. $127^{\circ}53'45''E$.

Collected by V.M. Bofinger.

Minimum value for age which reflects regional diastrophic event.

Ref: W.A. 1		Rb $\mu g/g$	Sr $\mu g/g$	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
D52/14/04 (1)	Total rock	205.5	137.0	4.312	0.8255
G.A. 1107 (2)	Biotite A	422.2	3.6	340.310	5.6431
	Biotite B	421.1	4.5	270.050	4.5466
E52/05/02					
G.A. 5126	Total rock	117.2	177.5	1.898	0.7581
E52/05/03					
G.A. 5127	Total rock	204.5	163.5	3.598	0.8010
E51/08/03					
G.A. 5148	Total rock	198.2	141.0	4.041	0.8150
E52/08/04					
G.A. 5149	Total rock	199.7	120.4	4.769	0.8380

		Rb/g	Sr/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/06/49					
G.A. 5217	Total rock	313.5	37.1	24.272	1.3301
E52/06/50					
G.A. 5218	Total rock	311.7	64.7	13.854	1.0709
E52/06/51					
G.A. 5219	Total rock	305.5	30.6	28.678	1.4495

G.A. 1107 Age: 1823 $\pm$ 17 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7121 $\pm$
0.003 (I)

Collected by V.M. Bofinger

Cambridge Gulf. Lat. 115°50'50"S. Long. 128°52'10"E.
Whitewater Volcanics.

Age: (1) 1823 $\pm$ 17 m.y. Initial Sr⁸⁷/Sr⁸⁶
(1) 0.7121 $\pm$ 0.003 (I)
(2) 1027 m.y. (2) 0.700 (A)

(1) lies on isochron inside experimental error.

Indicates age of emplacement.

(2) apparent age only. Unrelated.

G.A. 5126 Lansdowne. Lat. 17°54'10"S. Long. 126°25'20"E.
Rhyolite Porphyry from Whitewater Volcanics.

Lies on isochron inside experimental error.

Indicates age of emplacement

G.A. 5127 Lansdowne. Lat. 17°54'00"S. Long. 126°21'30"E.

G.A. 5148 Lennard River.

G.A. 5149 Lennard River.

G.A. 5217 Dixon Range. Lat. 17°27'30"S. Long. 127°35'35"E.

G.A. 5218 Dixon Range. Lat. 17°27'58"S. Long. 127°35'35"E.

G.A. 5219. Dixon Range. Lat. 17°28'25"S. Long. 127°35'30"E.

G.A. 5126, 5127, 5148, 5149, 5217, 5218 and 5219 are all rhyolite
porphyry from the Whitewater Volcanics. They all lie on

the isochron within experimental error.

The age of 1823 ± 17 m.y. indicates the age of emplacement.

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/06/07	(1) Total rock	523.3	24.6	61.239	2.2489
G.A. 956	(2) K-feldspar	1106.8	9.5	333.875	5.6490
D52/14/03	(1) Total rock	255.0	25.7	28.553	1.3978
G.A. 960	(2) K-feldspar	474.8	34.0	40.136	1.7047
E52/06/05	(1) Total rock	235.4	128.8	5.254	0.8389
G.A. 964	(2) Biotite	979.3	5.2	544.390	10.3500
E52/06/08					
G.A. 965	Total rock	242.7	113.9	6.123	0.8896
E52/02/34	(1) Total rock A	508.5	34.1	42.906	1.8206
G.A. 979	Total rock B	516.7	33.4	44.476	1.8331
	(2) K-feldspar	512.4	70.0	23.027	1.3151
	(3) Biotite	522.7	14.4	104.530	3.3805
E52/6/52					
G.A. 5220	Total rock	278.9	26.3	30.544	1.4599

Age: 1788 ± 40 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7157 ± 0.009 (I)
Collected by V.M. Bofinger.

G.A. 956 Age: (1) 1788 ± 40 m.y. Initial Sr⁸⁷/Sr⁸⁶ (1) 0.7157 ± 0.009 (I)
(2) 1038 m.y. (2) 0.8674 (I)

Dixon Range. Lat. $17^{\circ}59'55''$ S. Long. $127^{\circ}48'00''$ E.

Whitewater Volcanics.

(1) lies on isochron just outside experimental error.
Indicates age of emplacement.

(2) lies on altered material isochron. Apparent age only and suggests loss of Sr^{87*}

G.A. 960 Age: (1) & (2) 1788 $\pm$ 40 m.y. Initial Sr⁸⁷/Sr⁸⁶
0.7157 $\pm$ 0.009 (I)

Cambridge Gulf. Lat. $15^{\circ}57'20''S$. Long. $128^{\circ}50'30''E$.

Rhyodacite from Whitewater Volcanics.

(1) & (2) lie on isochron just outside experimental error. Indicates age of emplacement.

G.A. 964 Age: (1) 1788 $\pm$ 40 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) $0.7157 \pm$
0.009 (1)

(2) 1264 m.y.

Dixon Range. Lat. $17^{\circ}57'30''S$. Long. $127^{\circ}47'55''E$.

Granitic mylonite from Whitewater Volcanics.

(1) lies on isochron just outside experimental error.
Indicates age of emplacement.

(2) apparent age only. Unrelated.

G.A. 965 Age: 1788 ± 40 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7157 ± 0.009 (I)

Dixon Range. Lat. $17^{\circ}02'54''\text{S}$. Long. $127^{\circ}44'06''\text{E}$.

Feldspar porphyry from Whitewater Volcanics.

Lies on isochron just outside experimental error.
Indicates age of emplacement.

G.A. 979 Age: (1) 1823 $\pm$ 17 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) $0.7121 \pm$
0.003 (1)

(2) 1788 ± 40 m.y. (2) 0.7157 ± 0.009 (I)

(3) 1823 ± 17 m.y. (3) 0.7121 ± 0.003 (I)

Lissadell. Lat. $16^{\circ}27'02''S$. Long. $128^{\circ}09'02''E$.

Whitewater Volcanics.

(1) & (3) lie on isochron inside experimental error.
Indicates age of emplacement.

(2) lies on isochron just outside experimental error.

G.A. 5220 Age: 1788 $\pm$ 40 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7157 $\pm$ 0.009 (I)

Dixon Range. Lat. 17°29'02"S. Long. 127°35'25"E.

Rhyolite porphyry from Whitewater Volcanics.

Lies on isochron just outside experimental error.

Indicates age of emplacement.

Ref:	W.A. 1		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
D52/14/01	Total rock	56.8	166.1	0.983	0.7246 (meas.)	

G.A. 1105 Age: 1778 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7000 (A)

Collected by V.M. Bofinger.

Cambridge Gulf. Lat. 15°57'05"S. Long. 128°50'45"E.

Dolerite intruding Whitewater Volcanics.

Age of intrusion of dolerite.

Ref:	W.A. 1		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/02/02	Total rock	333.8	54.3	17.667	1.1497	

G.A. 961

E52/02/06	Total rock A	219.3	181.2	3.479	0.7993
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G.A. 962	Total rock B	219.3	182.2	3.461	0.7964
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Age: 1761 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7118 (I)

Collected by V.M. Bofinger.

G.A. 961 Lissadell. Lat. 16°14'00"S. Long. 127°57'05"E.

G.A. 962 Lissadell. Lat. 16°29'00"S. Long. 127°55'00"E.

Rhyolitic tuff from Valentine Siltstone.

Age of deposition.

Ref:	W.A. 1		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/09/04	Total rock	32.3	187.9	0.494	0.7146 (calc.)	

G.A. 5083

E52/05/12

G.A. 5136	Total rock	77.2	151.0	1.469	0.7382 (calc.)
					0.7374 (meas.)

Age: 1807 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7000 (I)

Collected by V.M. Bofinger.

G.A. 5083 Mount Ramsay. Lat. $18^{\circ}27'00''\text{S}$. Long. $126^{\circ}35'30''\text{E}$.

G.A. 5136 Lansdowne. Lat. $17^{\circ}26'40''\text{S}$. Long. $126^{\circ}06'25''\text{E}$.

Dolerites from Carson Volcanics.

Age of intrusion.

Ref:	W.A. 1		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/09/49	Muscovite		424.1	39.3	30.990	1.5146
G.A. 5211						

Age: 1866 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.70 (A)

Collected by V.M. Bofinger.

Mount Ramsay. Lat. $17^{\circ}19'55''\text{S}$. Long. $127^{\circ}05'10''\text{E}$.

Warton Sandstone.

Age reflects source material and not age of deposition.

Ref:	W.A. 1		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/09/48	Muscovite		511.1	32.1	45.753	1.9337
G.A. 5210						

Age: 1909 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.70 (A)

Collected by V.M. Bofinger.

Mount Ramsay. Lat. $17^{\circ}19'55''\text{S}$. Long. $127^{\circ}05'10''\text{E}$.

Warton Sandstone.

Age reflects source material and not age of deposition.

Ref:	W.A. 1		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/5						
B.M.R. 65/16/7047	Total rock		93.4	138.5	1.939	0.7507
E52/10/01						
G.A. 1096	Total rock		36.5	191.3	0.548	0.7164 (calc.) 0.7167 (meas.)

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/02/21					
G.A. 5214	Total Rock B	223.9	41.3	15.577	1.0996
E52/05/01	Total rock A	135.1	109.2	3.555	0.7903
G.A. 5125	Total rock B	133.6	108.0	3.557	0.7916
E52/02/11					
G.A. 1241	Plagioclase	90.0	421.1	0.614	0.7182 (meas.)
E52/02/17					
G.A. 5241	Total rock	36.5	194.2	0.540	0.7176 (calc.) 0.7198 (meas.)
E52/05/07					
G.A. 5131	Total rock	45.1	216.1	0.599	0.7201 (calc.) 0.7194 (meas.)
E52/05/08					
G.A. 5132	Total rock	52.8	194.2	0.781	0.7234 (calc.) 0.7225 (meas.)
E52/05/09					
G.A. 5133	Total rock	40.3	188.9	0.613	0.7196 (calc.) 0.7180 (meas.)
B.M.R. 65/16/7047	<u>Age: 1800 $\pm$ 25 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7026 $\pm$ 0.006 (I)</u>				
G.A. 5052 - 5133	Collected by K. Plumb.				

All samples from Hart Dolerite.

They all lie on isochron inside experimental error
and indicate age of intrusion.

B.M.R. 65/16/7047 Lansdowne

G.A. 5052	Gordon Downs.	Lat. $18^{\circ}24'25''$ S.	Long. $128^{\circ}09'25''$ E.
1096			
G.A. 5214	Lissadell.	Lat. $16^{\circ}30'02''$ S.	Long. $127^{\circ}55'00''$ E.
G.A. 5125	Lansdowne.	Lat. $17^{\circ}46'00''$ S.	Long. $126^{\circ}38'45''$ E.
G.A. 1241	Lissadell.	Lat. $16^{\circ}20'55''$ S.	Long. $128^{\circ}06'05''$ E.
G.A. 5241	Lissadell.	Lat. $16^{\circ}59'05''$ S.	Long. $127^{\circ}36'35''$ E.
G.A. 5131	Lansdowne.	Lat. $17^{\circ}45'25''$ S.	Long. $126^{\circ}45'10''$ E.
G.A. 5132	Lansdowne.	Lat. $17^{\circ}23'40''$ S.	Long. $127^{\circ}16'20''$ E.
G.A. 5133	Lansdowne.	Lat. $17^{\circ}21'30''$ S.	Long. $127^{\circ}15'40''$ E.

Ref: W.A. 1

	Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
D52/14/02 Total rock	136.5	239.5	1.638	0.7213
G.A. 1106	<u>Age: 929 m.y.</u> Initial Sr ⁸⁷ /Sr ⁸⁶ 0.7000 (A)			
	Collected by V.M. Bofinger.			
	Cambridge Gulf. Lat. $15^{\circ}48'55''$ S. Long. $128^{\circ}30'20''$ E.			
	Dolerite intruding O'Donnell Formation.			
	Apparent age of intrusion of dolerite.			

Ref: W.A. 1

	Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/02/36				
G.A. 1009 Glauconite	336.7	20.3	51.868	1.8229
E52/05/18				
G.A. 5205 Glauconite	254.7	20.4	35.923	1.4777
	<u>Age: 1541 m.y.</u> Initial Sr ⁸⁷ /Sr ⁸⁶ 0.70 (A)			
	Collected by V.M. Bofinger.			
G.A. 1009	Lissadell.	Lat. $16^{\circ}05'55''$ S.	Long. $128^{\circ}09'00''$ E.	
G.A. 5205	Lansdowne.	Lat. $17^{\circ}26'00''$ S.	Long. $126^{\circ}36'55''$ E.	
	Pentecost Sandstone.			
	Minimum age only.			

Ref: W.A. 1
D52/14/07 Glauconite Rb μ g/g Sr μ g/g Rb⁸⁷/Sr⁸⁶ Sr⁸⁷/Sr⁸⁶
337.1 9.8 98.756 3.0571
G.A. 1008 Age: 1696 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.70 (A)

Collected by V.M. Bofinger.

Cambridge Gulf. Lat. 15°45'40"S. Long. 127°43'00"E.

Pentecost Sandstone.

Minimum age only.

Ref: W.A. 1		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
D52/14/08					
G.A. 5244 A	Total rock	251.6	74.0	9.771	0.9436 (calc.) 0.9416 (meas.)
G.A. 5244 D	Total rock	243.7	69.8	10.038	0.9517 (meas.)
G.A. 5244 E	Total rock	287.1	73.5	11.226	0.9769 (meas.)
G.A. 5244 F	Total rock	269.3	73.1	10.595	0.9723 (meas.)
G.A. 5244 B	Total rock	263.1	69.8	10.837	0.9701 (calc.) 0.9701 (meas.)
					<u>Age: 1707 $\pm$ 31 m.y.</u> Initial Sr ⁸⁷ /Sr ⁸⁶ 0.708 $\pm$ 0.003 (I)

Collected by V.M. Bofinger.

Cambridge Gulf. Lat. 15°27'45"S. Long. 128°06'45"E.

From Wyndham Shale.

Lies on isochron inside experimental error.

Indicates age of diagenesis.

Ref: W.A. 1		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/02/42					
G.A. 5245 B	Total rock	247.1	44.5	16.429	0.9888
G.A. 5245 D	Total rock	266.3	48.3	16.312	0.9887
G.A. 5245 E	Total rock	168.9	34.4	14.491	0.9619
G.A. 5245 F	Total rock	187.2	36.6	15.065	0.9663
G.A. 5245 I	Total rock	195.0	40.0	14.362	0.9593
G.A. 5245 J	Total rock	233.7	35.1	19.793	1.0492

Age: 1184 $\pm$ 123 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7188 $\pm$
0.02 (I)

Collected by V.M. Bofinger.

Lissadell. Lat. 16°07'00"S. Long. 128°44'25"E.

Shale from Golden Gate Siltstone.

Lies on isochron inside experimental error.

Indicates age of diagenesis.

Ref: W.A. 1

		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/06/36					
G.A. 5071 A	Total rock	200.5	151.5	4.944	0.7892
G.A. 5071 B	Total rock	109.4	70.8	4.440	0.7836

E52/06/37

G.A. 5072 D	Total rock	82.5	123.4	1.457	0.7347
G.A. 5072 E	Total rock	36.1	205.3	0.505	0.7203

Age: 1128 $\pm$ 110 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7121 $\pm$
0.005 (I)

Collected by V.M. Bofinger.

G.A. 5071A. & B Dixon Range. Lat. 17°04'45"S. Long. 128°41'10"E.

G.A. 5072D & E Dixon Range. Lat. 17°04'30"S. Long. 128°41'30"E.
Mount John Shale.

Lie on isochron inside experimental error.

Indicate age of diagenesis.

Ref: W.A. 1

		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/09/34					
G.A. 5113A	Total Rock	65.6	43.8	4.309	0.7831

E52/09/34

G.A. 5113	Total rock	214.6	39.5	15.598	0.8971
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E52/09/15

G.A. 5094A	Total rock	226.1	47.6	13.666	0.9197
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Age: (1) 1042 ± 51 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) 0.7246 ± 0.0092 (I)
 (2) 736 m.y. (2) 0.7369 (A)

Collected by V.M. Bofinger.

G.A. 5113A Mount Ramsay. Lat. $18^{\circ}26'00''\text{S}$. Long. $126^{\circ}46'30''\text{E}$.

Matheson and Maddox Formations.

- (1) age of diagenesis given by an isochron.
- (2) impressed metamorphic age given by an isochron.

G.A. 5113F Age: 736 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7369 (A)

Locality and rock as for G.A. 5113A.

Age: (1) 1042 ± 51 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ (1) 0.7246 ± 0.0092 (I)
 (2) 732 m.y. (2) 0.778 (A)

G.A. 5094A Mount Ramsay. Lat. $18^{\circ}25'00''\text{S}$. Long. $126^{\circ}47'00''\text{E}$.

- (1) age of diagenesis given by an isochron.
- (2) impressed metamorphic age given by an isochron.

Ref: W.A. 1

		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/09/34					
G.A. 5113C	Total rock	76.5	127.1	1.729	0.7541 (calc.) 0.7538 (meas.)

E52/09/34

G.A. 5113E	Total rock	97.9	15.3	18.462	0.9949
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E52/09/15

G.A. 5094B	Total rock	242.0	44.6	15.587	0.9548
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E52/09/15

G.A. 5094C	Total rock	251.2	44.2	16.328	0.9644
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Age: 1031 ± 23 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.7288 ± 0.0024 (I)

Collected by V.M. Bofinger.

G.A. 5113C

& E Mount Ramsay. Lat. $18^{\circ}26'00''\text{S}$. Long. $126^{\circ}46'30''\text{E}$.

G.A. 5094B

& C Mount Ramsay. Lat. $18^{\circ}25'00''\text{S}$. Long. $126^{\circ}47'00''\text{E}$.

Shales from Matheson and Maddox Formations.

Lie on isochron inside experimental error.

Indicate age of diagenesis.

Ref: W.A. 1

		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/09/15					
G.A. 5094 D	Total rock	237.8	47.3	14.455	0.9234 (calc.)
					0.9233 (meas.)
G.A. 5094E	Total rock	229.2	40.1	16.436	0.9468

Age: 732 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.778 (A)

Collected by V.M. Bofinger.

G.A. 5094D

& E Mount Ramsay. Lat. $18^{\circ}25'00''\text{S}$. Long. $126^{\circ}47'00''\text{E}$.

Shale from Matheson and Maddox Formation.

Lies on isochron. Indicates age of metamorphism.

Ref: W.A. 1

		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/02/41					
G.A. 5236B	Total rock	98.5	25.7	11.200	0.8698
G.A. 5236C	Total rock	150.9	122.2	3.549	0.7597 (meas.)
G.A. 5236D	Total rock A	70.9	9.2	23.126	1.1783
G.A. 5236D	Total rock C	70.5	9.0	22.415	0.9906
G.A. 5236E	Total rock A	104.7	23.7	12.976	0.9040
G.A. 5236E	Total rock B	103.7	21.4	13.942	0.9197
G.A. 5236H	Total rock	127.9	57.5	6.461	0.8079 (calc.)
					0.8064 (meas.)
<u>Age: 1080 $\pm$ 80 m.y.</u>					Initial Sr ⁸⁷ /Sr ⁸⁶ 0.7064 $\pm$ 0.007 (I)

Collected by V.M. Bofinger.

Lissadell. Lat. $16^{\circ}33'02''\text{S}$. Long. $128^{\circ}21'30''\text{E}$.

Shale from Glenhill Formation.

Lies on isochron just outside experimental error.

Indicates age of diagenesis.

Ref: W.A. 1

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/02/41					
G.A. 5236A	Total rock A	131.5	26.9	14.444	0.9699 (calc.)
					0.9475 (meas.)
G.A. 5236A	Total rock B	130.9	27.0	13.916	0.9383
<u>Age: 417 $\pm$ 111 m.y.</u> Initial Sr ⁸⁷ /Sr ⁸⁶ 0.8605 $\pm$ 0.029 (I)					

Collected by V.M. Bofinger.

Lissadell. Lat. 16°33'02"S. Long. 128°21'30"E.

Shale from Glenhill Formation.

Lies on isochron just outside experimental
error. Indicates age of metamorphism.

Ref: W.A. 1

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
D52/14/10					
G.A. 5247A	Total rock	140.2	101.9	3.954	0.7742
G.A. 5247C	Total rock	222.4	107.6	5.945	0.7979 (calc.)
					0.7977 (meas.)
G.A. 5247D	Total rock	213.5	100.9	6.085	0.8014
G.A. 5247F	Total rock	102.9	78.8	3.759	0.7703
<u>Age: 906 $\pm$ 181 m.y.</u> Initial Sr ⁸⁷ /Sr ⁸⁶ 0.7232 $\pm$ 0.01 (I)					

Collected by V.M. Bofinger.

Cambridge Gulf. Lat. 15°33'00"S. Long. 128°50'05"E.

Shale from Pincombe Formation.

Lies on isochron inside experimental error.
Indicates age of diagenesis.

Ref: W.A. 1

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/6					
G.A. 980	Total rock	223.2	78.6	8.166	0.8262 (calc.)
					0.8444 (meas.)
E52/06/48					
G.A. 5243	Total rock	123.0	154.2	2.293	0.7796 (calc.)
					0.7790 (meas.)

Age: 739 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.76 (A)

Collected by V.M. Bofinger.

Dixon Range. Lat. $17^{\circ}04'58''\text{S}$. Long. $128^{\circ}20'58''\text{E}$.

Shale from Moonlight Valley Tillite.

Age is based on an isochron and is age of the
Moonlight Valley Glaciation.

Ref: W.A. 1		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
D52/14/10					
G.A. 5247B(1)	Total rock A	216.2	137.0	4.535	0.8591 (calc.) 0.7953 (meas.)
	(2) Total rock C	217.8	126.7	4.944	0.7954 (calc.)
	(3) Total rock D	217.8	125.3	4.974	0.7966 (calc.)
G.A. 5247E(1)	Total rock A	237.7	125.3	5.454	0.7991 (calc.) 0.8005 (meas.)
D52/14/09	(2) Total rock C	231.2	122.1	5.443	0.7999
G.A. 5246A	Total rock	161.1	62.4	7.419	0.8250 (meas.)
G.A. 5246B	Total rock	126.4	53.1	6.844	0.8198 (calc.)
<u>Age: 874 ± 195 m.y.</u> Initial $\text{Sr}^{87}/\text{Sr}^{86}$ $0.7346 \pm$ 0.017 (I)					

Collected by V.M. Bofinger.

G.A. 5247B
& E Cambridge Gulf. Lat. $15^{\circ}33'00''\text{S}$. Long. $128^{\circ}50'05''\text{E}$.

G.A. 5246A
& B Cambridge Gulf. Lat. $15^{\circ}51'40''\text{S}$. Long. $128^{\circ}40'00''\text{E}$.
Shales from Pincombe Formation.

Lie on isochron inside experimental error.

Indicate age of diagenesis.

Ref: W.A. 1		Rb $\mu\text{g/g}$	Sr $\mu\text{g/g}$	Rb $^{87}/\text{Sr}^{86}$	Sr $^{87}/\text{Sr}^{86}$
E52/09/06					
G.A. 5085A	Total rock	214.9	97.1	6.358	0.8238
G.A. 5085B	Total rock	220.8	84.7	7.491	0.9135 (calc.) 0.8242 (meas.)

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/09/07					
G.A. 5086	Total rock	223.8	98.2	6.552	0.8244
E52/09/08					
G.A. 5087B	Total rock	236.7	41.4	16.442	0.8813
G.A. 5087C	Total rock	234.4	38.9	17.325	0.8878
E52/09/39					
G.A. 5118	Total rock	196.5	39.9	14.172	0.8610
E52/09/40					
G.A. 5119	Total rock	140.5	57.5	7.021	0.8360

Age: 739 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.76 (A)

Collected by V.M. Bofinger.

G.A. 5085A
 & B Mount Ramsay. Lat. 18°39'05"S. Long. 126°33'45"E.
 G.A. 5086 Mount Ramsay. Lat. 18°39'05"S. Long. 126°33'45"E.
 G.A. 5087B
 & C Mount Ramsay. Lat. 18°42'15"S. Long. 126°38'45"E.
 G.A. 5118 Mount Ramsay. Lat. 18°04'15"S. Long. 126°35'50"E.
 G.A. 5119 Mount Ramsay. Lat. 18°05'50"S. Long. 126°35'30"E.

Shale from Landrigan Tillite.

Age is based on isochron and is the age
 of Moonlight Valley glaciation.

Ref: W.A. 1

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/06/45					
G.A. 5080A	Total rock	197.0	145.3	3.899	0.7744 (calc.) 0.7719 (meas.)
G.A. 5080B	Total rock	181.7	84.3	6.199	0.8053 (calc.) 0.8004 (meas.)
G.A. 5080C	Total rock	121.1	79.2	4.397	0.7750 (calc.) 0.7748 (meas.)
G.A. 5080D	Total rock	192.9	101.5	5.464	0.7929 (calc.) 0.7860 (meas.)
G.A. 5080E	Total rock	193.2	100.9	5.508	0.7978 (calc.) 0.7966 (meas.)

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/09/50					
G.A. 5216A	Total rock	201.1	21.7	26.603	1.0221 (calc.)
G.A. 5216B	Total rock	194.9	21.4	26.196	0.9999 (calc.) 1.0012 (meas.)
G.A. 5216C	Total rock	198.0	23.8	23.936	0.9836 (calc.) 0.9838 (meas.)
G.A. 5216D	Total rock	221.7	38.9	16.381	0.9001 (calc.)
<u>Age: 739 $\pm$ 30 m.y. Initial Sr⁸⁷/Sr⁸⁶</u>					0.7331 $\pm$ 0.0059 (I)
Collected by V.M. Bofinger.					

G.A. 5080

A-E Dixon Range. Lat. 17°04'58"S. Long. 128°20'58"E.

Shale from Moonlight Valley Tillite.

Lies on isochron just outside experimental
error. Indicates age of the Moonlight
Valley glaciation.

G.A. 5216

A-D Mount Ramsay. Lat. 18°35'55"S. Long. 126°32'55"E.

Shale from Landrigan Tillite.

Age is based on isochron and is age of
the Moonlight Valley glaciation.

Ref: W.A. 1

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/06/32A					
G.A. 951	Total rock A	212.3	119.4	5.112	0.7812
	Total rock B	207.9	117.7	5.080	0.7832
E52/10/23					
G.A. 5239B	Total rock	128.0	42.7	8.613	0.8138
E52/10/23					
G.A. 5239E	Total rock	182.5	42.8	12.271	0.8511

Age: 685 $\pm$ 98 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7334 $\pm$
0.01 (I)

Collected by V.M. Bofinger.

G.A. 951 Dixon Range. Lat. 17°02'15"S. Long. 128°24'15"E.

G.A. 5239B

& E Gordon Downs. Lat. 18°26'15"S. Long. 127°50'15"E.

Shales from Ranford Formation.

Lies on isochron inside experimental error.

Indicate age of diagenesis.

Ref: W.A. 1

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/06/32B					
G.A. 952	Total rock	238.9	92.9	7.389	0.8003
E52/02/35					
G.A. 5250	Total rock	172.8	243.5	2.039	0.7458
E52/06/35					
G.A. 5070A	Total rock	217.6	150.7	4.150	0.7815
G.A. 5070B	Total rock	200.6	137.4	4.196	0.7867
E52/06/47					
G.A. 5242	Total rock	221.9	64.7	9.862	0.8355
E52/10/23					
G.A. 5239C	Total rock	136.3	35.3	11.096	0.8356 (calc.) 0.8346 (meas.)
G.A. 5239D	Total rock	148.3	44.8	1.511	0.8367
E52/10/11					
G.A. 5062A	Total rock	118.2	40.3	8.437	0.8156
G.A. 5062B	Total rock	263.3	50.3	15.033	0.8836

Age: 685 m.y. Initial Sr⁸⁷/Sr⁸⁶

Collected by V.M. Bofinger.

G.A. 952 Dixon Range. Lat. 17°02'15"S. Long. 128°24'15"E.

G.A. 5250 Lissadell. Lat. 16°03'30"S. Long. 128°56'30"E.

G.A. 5070A & B Dixon Range. Lat. 17°02'15"S. Long. 128°24'15"E.

G.A. 5242. Dixon Range. Lat. 17°23'35"S. Long. 128°17'00"E.

G.A. 5239C & D Gordon Downs. Lat. 18°26'15"S. Long. 127°50'15"E.

G.A. 5062 A & B Gordon Downs. Lat. 18°26'45"S. Long. 127°50'10"E.

All are shales from Ranford Formation.

Age of diagenesis. Related to isochron,

age 685 ± 98 m.y. (cf G.A. 951, 5239B, 5239E) but has different initial Sr⁸⁷/Sr⁸⁶.

Ref: W.A. 1

E51/08/06		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
G.A. 5213A	Total rock	203.8	54.2	10.814	0.8330
G.A. 5213B	Total rock	251.8	71.5	10.128	0.8271
G.A. 5213C	Total rock	224.9	53.9	11.981	0.8433
E52/05/13					
G.A. 5137A	Total rock	218.9	52.2	12.048	0.8422
G.A. 5137B	Total rock	196.6	47.1	11.992	0.8413
G.A. 5137C	Total rock	259.3	52.6	14.175	0.8657
G.A. 5137E	Total rock	149.8	43.4	9.919	0.8229
Age: 684 ± 85 m.y. Initial Sr ⁸⁷ /Sr ⁸⁶					0.7288 ± 0.013 (I)

Collected by V.M. Bofinger.

G.A. 5213A,B & C Lennard River. Lat. Long.

G.A. 5137A,B,C & E Lansdowne. Lat. $17^{\circ}23'20''$ S. Long. $126^{\circ}03'00''$ E.

From Thrassell Shale.

Lie on isochron inside experimental error.

Indicate age of diagenesis.

Ref: W.A. 1

E52/10/24		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
G.A. 5240A	Total rock	187.8	34.0	15.887	0.8815
G.A. 5240B	Total rock	211.1	39.2	15.466	0.8675
G.A. 5240D	Total rock	239.9	36.20	19.068	0.8792 (meas.)
G.A. 5240E	Total rock	224.4	37.2	17.324	0.8862
G.A. 5240G	Total rock	236.3	40.2	16.916	0.8801
E52/10/12					
G.A. 5063A	Total rock	120.8	37.7	9.216	0.8103
G.A. 5063B	Total rock	235.8	39.8	17.051	0.8799
G.A. 5063C	Total rock	180.7	43.9	11.849	0.8506
Age: 653 ± 48 m.y. Initial Sr ⁸⁷ /Sr ⁸⁶					0.7262 ± 0.01 (I)

Collected by V.M. Bofinger.

G.A. 5063A,B&C Gordon Downs. Lat. $18^{\circ}26'15''$ S. Long. $127^{\circ}51'15''$ E.G.A. 5240A,B,D,E&G Gordon Downs. Lat. $18^{\circ}25'15''$ S. Long. $127^{\circ}54'55''$ E.

Shales from Elvire Formation.

Lie on isochron inside experimental error.

Indicate age of diagenesis.

Ref: W.A. 1

		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
E52/10/13					
G.A. 5064A	Total rock	174.9	56.2	8.956	0.8064
G.A. 5064B	Total rock	169.6	51.6	9.455	0.8187
E52/10/14					
G.A. 5065	Total rock	207.0	39.9	14.892	0.8719
E52/10/15					
G.A. 5066	Total rock	238.1	44.6	15.355	0.8673
E52/09/09					
G.A. 5088	Total rock	230.1	39.1	16.932	0.8910
E52/09/10					
G.A. 5089	Total rock	213.6	53.5	11.482	0.8403
E52/09/11					
G.A. 5090	Total rock	236.0	40.9	16.602	0.8839
E52/09/12					
G.A. 5091	Total rock	207.9	38.0	15.713	0.8764
E52/09/13					
G.A. 5092	Total rock	217.3	44.4	14.056	0.8697
E52/09/14					
G.A. 5093	Total rock	194.9	38.2	14.675	0.8714 (calc.) 0.8711 (meas.)
E52/09/38					
G.A. 5117	Total rock	219.9	29.6	21.331	0.9233

Age: 666 m.y. $\pm$ 56 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7318 $\pm$ 0.01 (I)

Collected by V.M. Bofinger.

G.A. 5064A & B Gordon Downs. Lat. 18°26'02"S. Long. 127°53'45"E.

From Timperley Shale.

Age of diagenesis. Does not lie on isochron.

(cf G.A. 5064B, 5065) owing to different initial Sr⁸⁷/Sr⁸⁶.

G.A. 5064A Initial Sr⁸⁷/Sr⁸⁶. G.A. 5064B Initial Sr⁸⁷/Sr⁸⁶ 0.7318 $\pm$ 0.01.

- G.A. 5065 Gordon Downs. Lat. $18^{\circ}26'50''\text{S}$. Long. $127^{\circ}54'15''\text{E}$.
From Timperley Shale.
Lies on isochron inside experimental error.
Indicates age of diagenesis.
- G.A. 5066 Gordon Downs. Lat. $18^{\circ}26'00''\text{S}$. Long. $127^{\circ}51'50''\text{E}$.
From Timperley Shale.
Does not lie on isochron (cf A5064B, 5065) owing to different initial $\text{Sr}^{87}/\text{Sr}^{86}$.
Initial $\text{Sr}^{87}/\text{Sr}^{86}$
- G.A. 5088 Mount Ramsay. Lat. $18^{\circ}48'00''\text{S}$. Long. $126^{\circ}52'45''\text{E}$.
From McAlly Shale.
Lies on isochron inside experimental error.
Indicates age of diagenesis.
- G.A. 5089 Mount Ramsay. Lat. $18^{\circ}48'15''\text{S}$. Long. $126^{\circ}52'55''\text{E}$.
From McAlly Shale.
Lies on isochron within experimental error.
Indicates age of diagenesis.
- G.A. 5090 Mount Ramsay. Lat. $18^{\circ}48'50''\text{S}$. Long. $126^{\circ}52'55''\text{E}$.
From McAlly Shale.
Lies on isochron inside experimental error.
Indicates age of diagenesis.
- G.A. 5091 Mount Ramsay. Lat. $18^{\circ}49'00''\text{S}$. Long. $126^{\circ}52'50''\text{E}$.
From McAlly Shale.
Lies on isochron inside experimental error.
Indicates age of diagenesis.
- G.A. 5092. Mount Ramsay. Lat. $18^{\circ}47'15''\text{S}$. Long. $126^{\circ}52'10''\text{E}$.
From McAlly Shale.
Age of diagenesis. Does not lie on isochron (cf G.A. 5088, 5089, 5090, 5091) owing to different initial $\text{Sr}^{87}/\text{Sr}^{86}$.
Initial $\text{Sr}^{87}/\text{Sr}^{86}$
- G.A. 5093 Mount Ramsay. Lat. $18^{\circ}47'35''\text{S}$. Long. $126^{\circ}51'50''\text{E}$.
From McAlly Shale.
Age of diagenesis. Age based on isochron (cf G.A. 5088, 5089, 5090, 5091) but does not lie on it owing to different initial $\text{Sr}^{87}/\text{Sr}^{86}$.
Initial $\text{Sr}^{87}/\text{Sr}^{86}$

G.A. 5117 Mount Ramsay. Lat. $18^{\circ}20'30''\text{S}$. Long. $126^{\circ}29'05''\text{E}$.
From McAlly Shale.

Age of diagenesis. Age based on an isochron
(cf G.A. 5088, 5089, 5090, 5091) but does not
lie on it owing to different initial $\text{Sr}^{87}/\text{Sr}^{86}$.
Initial $\text{Sr}^{87}/\text{Sr}^{86}$

Ref: W.A. 1

		Rb g/g	Sr g/g	$\text{Rb}^{87}/\text{Sr}^{86}$	$\text{Sr}^{87}/\text{Sr}^{86}$
D52/14/05					
G.A. 977	(1) Glauconite B	258.4	14.4	51.427	1.0424
	(2) Glauconite A	260.6	14.9	50.039	1.0347

Age (1) 477 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.70 (A)
(2) 480 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ 0.70 (B)

Collected by V.M. Bofinger.

Cambridge Gulf. Lat. $15^{\circ}46'25''\text{S}$. Long. $128^{\circ}17'20''\text{E}$.
Clark Sandstone (Cambrian).

Minimum age only.

Ref: W.A. 2

		Rb g/g	Sr g/g	$\text{Rb}^{87}/\text{Sr}^{86}$	$\text{Sr}^{87}/\text{Sr}^{86}$
I50/11					
44887	Total rock	310.9	79.0	11.53	0.8904
	Microcline	553.5	107.8	15.11	0.9417
44888	Total rock	300.5	132.7	6.585	0.8164
	Microcline	523.8	213.7	7.127	0.8177
44890	Total rock	215.3	252.7	2.461	0.7479
	Microcline	408.0	394.9	2.988	0.7586

Age: 1100 $\pm$ 50 m.y. Initial $\text{Sr}^{87}/\text{Sr}^{86}$ $0.7118 \pm 0.0064(\text{I})$

Collected by A. Turek and N.C.N. Stephenson.

4487 Adamellite from Albany Granite collected on upper King Bridge
over King River.

44888 Adamellite from the Albany Granite Halifax St Quarry. Albany
Townsite.

44890 Albany Granite. Halifax St Quarry. Albany Townsite.

Age of intrusions. Marks waning stage of the main orogeny
in the south coast of W.A.

Ref: W.A. 2

I50/11		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
53886	Total rock	234.9	27.3	26.02	1.2314
53887	Total rock	299.0	33.0	20.86	1.1553
53888 (1)	Total rock	299.4	18.3	51.02	1.6418
(2)	Total rock	296.6	19.6	47.57	1.5828
<u>Age: 1150 $\pm$ 40 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.816 $\pm$ 0.017 (I)</u>					

Collected by A. Turek and N.C.N. Stephenson.

53886 Shale from Stirling Range. Eastern slope of Toolbrunup.

53887 Shale from Stirling Range. Eastern slope of Toolbrunup.

53888 Shale from Stirling Range. Eastern slope of Toolbrunup.

Age of metamorphism cf. 53885 for minimum age of deposition.

Ref: W.A. 2

I50/11		Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
53885	Total rock	208.0	29.5	21.14	1.1225
<u>Age: 1340 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.72 (A)</u>					

Collected by A. Turek and N.C.N. Stephenson.

Shale from Stirling Range, eastern slope of Toolbrunup.

Minimum age of deposition.

W.A. (Unpublished)

G51/12		Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
Yowalga (1)	Total rock	1.8791	0.7231
<u>Age 1250 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.700 (A)</u>			
<u>1143 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.702 (A)</u>			

Collected by Hunt Oil Co.

Yowalga. Lat. 26°10'12"S. Long. 125°58'00"E.

Basalt at 2760', Yowalga No. 1 oil bore.

Approximate age of crystallization of basalt.

W.A. (Unpublished)

G51/12

Yowalga (3)

Total rock. K-Ar age : 447 m.y.

Analytical data - nil.

Basalt, 2760', Yowalga No. 2 oil bore.

Yowalga. Lat. $26^{\circ}10'12''$ S. Long. $125^{\circ}58'00''$ E.

Collected by Hunt Oil Co.

Minimum age (of metamorphism?)

W.A. (Unpublished)

G51/12

R 0592

Total rock. K-Ar age: 357 ± 12 m.y. $\%K$ $*Ar^{40}/K^{40}$

5.82 0.0230

Vesicular volcanic at 2422', Yowalga No. 1 oil

bore. Yowalga. Lat. $26^{\circ}10'12''$ S. Long. $125^{\circ}58'00''$ E.

Collected by Hunt Oil Co.

Minimum age only.

W.A. (Unpublished)

G51/12

Yowalga (2)

	Rb μ g/g	Sr μ g/g	Rb ⁸⁷ /Sr ⁸⁶	Sr ⁸⁷ /Sr ⁸⁶
2417'	76.9	95.7	2.3114	0.7280
2418'	114.8	204.7	1.4067	0.7233
2419'	132.5	247.3	1.5402	0.7243

Age: (1) 446 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.7136 (I)(2) c.1000 m.y. Initial Sr⁸⁷/Sr⁸⁶ 0.702 (A)

Collected by Hunt Oil Co.

Yowalga. Lat. $26^{\circ}10'12''$ S. Long. $125^{\circ}58'00''$ E.

Basalt. 2417' - 2419', Yowalga No. 2 oil bore.

(1) is metamorphic age from 3 points on isochron.

(2) apparent age of crystallization of basalt.

W.A. (Unpublished)

G52/13

R 0558

Total rock. K-Ar age : 391 ± 16 m.y. $\%K$ $*Ar^{40}/K^{40}$

1.16 0.0254

Andesite, 2011'-2016', Lennis No. 1 oil bore.

Lennis. Lat. $27^{\circ}17'$ S. Long. $126^{\circ}21'$ E.

Collected by Hunt Oil Co.

Minimum age.

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1:250,000 SHEET INDEX OF AUSTRALIA
SHOWING AREAS
FROM WHICH SAMPLES
WERE
DATED IN 1966

 Sample area

96

INDEX ISAMPLES IN ORDER OF 1:250,000 SHEET NUMBER

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<u>ANTARCTICA</u>					
R42/43	5429	4	G56/10	1411	8
"	5430	4	"	1412	9
"	5431	4	G56/14	1407	8
"	5432	4	"	5299	9
"	5433	4	"	5302	10
"	5434	4	"	5304	10
			"	5316	10
			"	5540	11
<u>NEW SOUTH WALES</u>			H56/2	1400	7
H54/12/4	5389	5	"	1401	7
H55/16	1372	4	"	1403	8
"	1373	4	"	1404	8
"	1374	5	"	1413	9
"	1375	5	"	5301	9
H56/3	1408	5	"	5367	10
			"	5368	10
			"	5545	11
<u>NORTHERN TERRITORY</u>			H56/3	5541	11
D52/11	Moyle (1)	6	"	5542	11
E53/10	2075	6	"	5543	11
F53/14	5429	6	"	5544	12
G53/2	1059K	6			
<u>QUEENSLAND</u>			<u>TASMANIA</u>		
E55/14/1	5283	12	K55/3	818	18
E55/14/5	5535	13	"	819	17
E55/14/17	5284	12	"	823	18
E55/14/18	5533	13	"	824A, B	17
E55/14/44	5274	12	"	827	18
F54/9	5390	13	"	1125	15
F55/2/10	5285	13	"	1126	15
G54/8	RO695	14	"	1440	18
G55/1	RO581	7	"	1442	18
G55/6	Balfour (1)	14	"	1444	18
G55/7	Cunno (1)	14	"	1445	18
G55/11	Geo. 1	14	"	1447	17
G55/12	1979	7	"	1448	17
G56/2	5300	9	"	1450	18
G56/10	1410	8	"	1451	18
			K55/5	205	15
			"	748	15
			"	814	15
			"	815	15

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SHEET NUMBER GA OR
SAMPLE NO. PAGE

K55/5	816	15
"	817	15
"	821	15
"	826A, C	15
"	1127	20
"	1195	18
"	1196	20
"	1197	22
"	1198	22
"	1200	15
"	1201	15
"	1202	20
"	1203	20
"	1204	20
"	1205	21
"	1441	18
"	1449	18
"	1504	20
"	1505	20
"	1506	21
"	1507	21
K55/6	1213	21
K55/6	Bischoff	21

TERRITORY OF PAPUA AND NEW GUINEA

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B56/12	5435	23

VICTORIA

J54/6	1017	24
"	1060	25
"	1116	27
J54/7	1065	26
"	1141	27
J54/8	1023	25
"	1066	26
"	1174	28
"	2095	28
J54/12	1064	26
"	1172	28
J55/5	1018	24
"	1019	24
"	1020	24
"	1021	25
"	1061	25
"	1062	26
"	1115	27
"	1171	27
"	1173	28

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SAMPLE NO. PAGE

WESTERN AUSTRALIA

D52/14/1	1105
D52/14/2	1106
D52/14/3	960
D52/14/4	1107
D52/14/5	977
D52/14/7	1008
D52/14/8	5244
D52/14/9	5246
D52/14/10	5247
E51/8/3	5148
E51/8/4	5149
E51/8/6	5213
E52/2/1	1097
E52/2/2	961
E52/2/3	1239
E52/2/4	1098
E52/2/5	1085
E52/2/6	962
E52/2/7	972
E52/2/8	1240
E52/2/9	1086
E52/2/10	1099
E52/2/11	1241
E52/2/13	973
E52/2/14	1100
E52/2/16	1242
E52/2/17	5241
E52/2/18	1366
E52/2/19	954
E52/2/21	5214
E52/2/24	970
E52/2/25	971
E52/2/26	974
E52/2/27	975
E52/2/29	963
E52/2/34	979
E52/2/35	5250
E52/2/36	1009
E52/2/37	1101
E52/2/41	5236
E52/2/42	5245
E52/5/1	5125
E52/5/2	5126
E52/5/3	5127
E52/5/7	5131
E52/5/8	5132
E52/5/9	5133
E52/5/12	5136
E52/5/13	5137
E52/5	65.16.7047

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E52/6/2	1102	33	E52/9/15	5094	56
E52/6/4	1081	43	E52/9/18	5097	37
E52/6/5	964	49	E52/9/23	5102	32
E52/6/6	1103	30	E52/9/25	5104	30
E52/6/7	956	49	E52/9/27	5106	29
E52/6/8	965	49	E52/9/32	5111	40
E52/6/13	969	37	E52/9/34	5113	56
E52/6/15	966	43	E52/9/35	5114	29
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E52/6/18	967	43	E52/9/39	5118	61
E52/6/19	957	37	E52/9/40	5119	61
E52/6/21	968	31	E52/9/48	5210	52
E52/6/24	1367	33	E52/9/49	5211	52
	1093	33	E52/9/50	5216	62
E52/6/25	958	39	E52/10/1	1096	52
E52/6/28	959	34	E52/10/2	5053	46
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E52/6/43	5078	33	E52/10/14	5065	65
E52/6/44	5079	33	E52/10/15	5066	65
E52/6/45	5080	61	E52/10/17	5230	42
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E52/6	980	59	G52/13	R0558	69
			I50/11	44887	67
E52/9/1	1104	43	"	44888	67
E52/9/4	5083	51	"	44890	67
E52/9/6	5085	60	"	53885	68
E52/9/7	5086	61	"	53886	68
E52/9/8	5087	61	"	53887	68
E52/9/9	5088	65	"	53888	68
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5080	61
5083	51
5085	60
5086	61
5087	61
5088	65
5089	65
5090	65
5091	65
5092	65
5093	65
5094	56
5097	37
5102	32
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5245	55
5246	60
5247	59
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44888	67
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53886	68
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Yowalga (3)	69

TABLE 1 GA NUMBERS OR SAMPLE NUMBERS OF SPECIMENS DATED FROM AUSTRALIAN TERRITORY IN 1966

ERA	PERIOD	AGE OF BASE m.y.	ANTARCTICA	NEW SOUTH WALES	NORTHERN TERRITORY	QUEENSLAND	TASMANIA	T.P.N.G.	VICTORIA	WESTERN AUSTRALIA
CAINOZOIC	QUAT.	2							1017, 1060, 1064, 1116, 1172	
	TERT.	65		1374, 1375, 1408		1400, 1401, 1403, 1404, 1407, 1410, 1411, 1412, 1413, 1979, 5299, 5300, 5301, 5302, 5304, 5316, 5367, 5368, 5540, 5541, 5542, 5543, 5544, 5545		5416, 5435	1018, 1019, 1020, 1021, 1023, 1061, 1062, 1065, 1066, 1115, 1141, 1171, 1173, 1174, 2095	
MESO- ZOIC	CRET.	136								
	JUR.	192		1372		Cunnamulla				
	TRIA.	225		1373						
PALAEOZOIC	PERM.	280				5535				
	CARB.	345				5284, 5533, Geo (1)	1205			
	DEV.	395				R0581	205, 748, 814, 815, 816, 817, 818, 819, 821, 823, 824, 826, 827, 1125, 1126, 1127, 1195, 1196, 1197, 1200, 1201, 1202, 1203, 1204, 1205, 1213, 1440, 1441, 1442, 1444, 1445, 1447, 1448, 1449, 1450, 1451, 1504, 1505, 1506, 1507, Bischoff Porphyry.			R0592, R0558
	SIL.	435				5274, 5283, 5285, Balfour (1)				5236
	ORD.	500		5389		5274, R0695				977, Yowalga (3)
	CAMB.	570			5249		1198			
					1059K		1194			951, 952, 980, 5062, 5063, 5064, 5065, 5066, 5070, 5080, 5085, 5086, 5087, 5088, 5089, 5090, 5091, 5092, 5093, 5094 D, E., 5102, 5117, 5118, 5119, 5137, 5243, 5213, 5216, 5239, 5240, 5242, 5250.
PROTEROZOIC	ADEL.	800								957, 1106, 5246, 5247, Yowalga (2)
		1000	5429							5071, 5072, 5094 A.C, 5113, 5236, 5245, 44887, 44888, 44890, 53886, 53887, 53888, Yowalga (1)
		1200								53885
		1400			Moyle (1)					1009, 1098, 1239, 5055, 5058, 5205
	CARP.	1600			2075, Moyle (1)					954, 956, 960, 961, 962, 964, 965, 972, 1008, 1096, 1105, 1241, 1366, 5073, 5125, 5131, 5132, 5133, 5214, 5220, 5221, 5222, 5230, 5232, 5241, 5244, 65.16.7047
		1800				5390				957, 958, 959, 963, 966, 967, 968, 969, 973, 974, 975, 976, 979, 1081, 1085, 1086, 1093, 1097, 1098, 1100, 1102, 1104, 1107, 1240, 1242, 1367, 5053, 5054, 5059, 5060, 5068, 5078, 5079, 5074, 5083, 5097, 5111, 5126, 5127, 5136, 5148, 5149, 5150, 5210, 5211, 5217, 5218, 5219, 5223, 5231
	LOWER PROT.	2000								970, 1101, 1103, 5057, 5104
		2500								971, 5106, 5114
	ARCHEAN	3100								

Division of Precambrian time into arbitrary periods. Division of Phanerozoic time after "The Phanerozoic Time-scale" (1964). Where two ages are listed in the text for one specimen, the GA no. of the specimen is tabulated under the older age. All numbers are GA numbers (on file, Dept. of Geophysics and Geochemistry, Australian National University, Canberra, A.C.T., except those with letter prefixes or suffixes. Consult Index II for text of above nos.

STATE OR COUNTRY

LAT

LONG

LOCALITY

4M

NUMBER

U

2

4

7

1

0

2

1

4

7

5

1

9

4

5

REFERENCE

CONC

TRACE

ELEMENTS

CHEMICAL ANALYSIS

U

2

4

7

1

0

2

1

4

7

5

1

9

4

5

AGE DETERMINATION

B.M.R. No.

ROCK UNIT

LOCATION

General

Lat.

Long.

Grid Ref.

Sheet

Photo Co-ords. Sheet

No.

State

Run

Photo

Quad

x

y

diag.

Date

SAMPLER

WEATHERING OF SAMPLE

COLLECTING METHOD

MINERAL DATA

Prepared by

Date

Mineral

Grain size (B.S. sieve)

Amount (gms.)

Purity (grain count %)

Remarks

AGE DETERMINATION.

Method and techniques

Minerals used

Decay constant K^{40}

Rb^{87}

U^{238}

U^{235}

Th^{232}

Re^{187}

Isotopic abundance

K^{40}

Rb^{87}

U^{238}

U^{235}

Th^{232}

Re^{187}

Os^{187}

AGE (x 10^6 years).

Calculated by

Date

K/Ar

Rb/Sr

U^{238}/Pb^{206}

U^{235}/Pb^{207}

Th^{232}/Pb^{208}

Pb^{207}/Pb^{206}

Pb^{208}/Pb^{204}

Re^{187}/Os^{187}

ANALYTICAL DATA (cons. $\mu g/g$).

Analysts

Date

K (total)

K^{40}

Re^{187}

Ar (total)

Ar^{40}

Os^{187}

Sr (total)

Sr^{87}

Rb^{87}

Atmospheric correction (%)

CHEMICAL ANALYSIS

Analyst

Date

SiO_2

Al_2O_3

Fe_2O_3

FeO

MgO

CaO

Na_2O

K_2O

H_2O

H_2O

CO_2

TiO_2

P_2O_5

MnO

T

TRACE ELEMENTS

Analyst

Date

MODAL ANALYSIS

Determined by

Date

AGE DETERMINATION

Rb/Sr

ISO - Pb - MIN

K/A

C14

Mo

Rb/Sr

ISO - Pb - MIN

K/A

C14

Mo

GENERAL GEOLOGY

Supplied by.....Date.....

PETROGRAPHY

Determined by.....Date.....

REFERENCES

Supplied by.....Date.....