Geochronology of the Australian Cenozoic: a history of tectonic and igneous activity, weathering, erosion, and sedimentation*

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SUPPLEMENTARY PAPERS

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* Appendices 1 and 2 [indicated by an asterisk (*) in the text and listed at the end of the paper] are Supplementary Papers; copies may be obtained from the Geological Society of Australia's website (www.gsa.org.au) or from the National Library of Australia's Pandora archive (http://nla.gov.au/nla.arc-25194).

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APPENDIX 1: GEOCHRONOLOGICAL RESULTS FOR CENOZOIC VOLCANISM IN AUSTRALIA

APPENDIX 2: GEOCHRONOLOGICAL RESULTS FOR CENOZOIC WEATHERING IN AUSTRALIA

APPENDIX 1: GEOCHRONOLOGICAL RESULTS FOR CENOZOIC VOLCANISM IN AUSTRALIA

This Microsoft Excel database is a compilation of geochronological results for Cenozoic volcanic rocks in Australia. Results were included only if relatively complete information is reported (i.e., sample numbers, analytical results and errors, location co-ordinates and/or locality descriptions, although there are of course some exceptions). As such, dates have been compiled from refereed papers, some extended abstracts, and some PhD and Honours theses, but generally not from regular abstracts, personal communications cited in papers, or unpublished laboratory results cited in papers. Some Mesozoic ages have been included in this database when regional studies were undertaken (e.g., of the Nebo area or Sydney Basin) and some older units were analysed and reported in the same paper as Cenozoic rocks.

This database was compiled mostly by B. Cohen, with assistance from K. Waltenberg for the West Australian results. All efforts have been made to make this database as complete as possible, and to avoid errors in compilation. Information that was confirmed via personal communications to the original authors (e.g., additional locality information, typographical errors) has been noted in the relevant parts of the database. The first submission of this database (15/06/2007) preceded the release of the K-Ar compilation by Gibson (2007); our database has been subsequently updated, and includes some additional references found using the Gibson compilation.

Results for the different methods (K-Ar, $^{40}Ar/^{39}Ar$, Rb-Sr, U-Pb, Fission Track, ^{14}C, thermoluminescence, U-Th series, and cosmogenic isotopes) have been compiled on separate sheets. The results in each sheet are sorted alphabetically and chronologically by first author. The following information has been compiled:

- Sample number, with different columns for the field number, laboratory number, and museum/university catalogue number. Duplicate or triplicate analyses of the same sample have been recorded on separate rows.
- State, i.e., QLD, NSW, VIC, TAS (including samples from Bass Strait), SA, and WA. Analyses from Lord Howe Island and the Tasman Sea have not been included into a state.

- Volcanic province, mostly following Johnson (1989).
- Rock type, which can either be a specific rock name (e.g., hawaiite, metaluminous trachyte, or comendite) when geochemistry or detailed thin section inspection was undertaken, or a more generic term (e.g., alkaline basalt, basalt *sensu lato*, felsic rock) where detailed information is not available.
- Volcano type. Cenozoic volcanoes in eastern Australia are classified as central volcanos, lava fields, or belonging to the leucitite suite (Johnson 1989). Additional volcano types not considered in Johnson (1989), but which have been included in this compilation, are: West Australian lamprolites, some Mesozoic rocks, and Seamounts.
- Geological rock unit, when known.
- Method (i.e., K-Ar, $^{40}Ar/^{39}Ar$, Rb-Sr, U-Pb, Fission Track, ^{14}C, thermoluminescence, U-Th series, and cosmogenic isotopes).
- Material dated (e.g., whole rock, groundmass, mineral separate).
- Analytical data (including decay constants and other constants used in the calculation of the age). The number of columns of analytical data compiled in this database varies for the different techniques.
- Age Reported. This is the age as it appeared in the original publication.
- Current Age Used. This is the age recalculated using the decay constants currently accepted by the international geological community (Steiger & Jäger 1977). For the U-Pb, Fission Track, ^{14}C, thermoluminescence, U-Th series, and cosmogenic isotope methods, the Age Reported and Current Age Used are identical.
- Age Error, as reported in the original publication.
- 1 or 2 sigma error. This column contains information as to whether the age error reported by the original authors is 1σ, 2σ, not specified, or no error reported.
- Sample quality comments (only for K-Ar, $^{40}Ar/^{39}Ar$, and Rb-Sr methods). This column provides brief comments made by the original authors on the suitability of the rock sample for dating. For some publications reporting K-Ar results, the A-D sample freshness classification of Wellman & McDougall (1974b) is used, i.e., “A, where potassium-bearing phases are fresh and the K-Ar age is likely to be correct; B, where potassium-bearing phases are slightly altered and the K-Ar age could be low; C, where potassium-bearing phases are considerably altered, and the age is likely to be

low; and D, where the potassium-bearing phases are extensively altered and the measured K-Ar age is expected to be much too low".

- Age comments. This column contains observations made by the original authors about the age of the sample, e.g., if the analysis represented a minimum age due to partial weathering of the sample. If available, information on the magnetic polarity of the rock is also included here. Cross-reference information (i.e., when the same rock unit has been analysed in two different papers) is also included in this column.
- Source of co-ordinates. This column provides information on the derivation of the compiled co-ordinates. Most commonly, co-ordinates were originally reported as either AMG66 grid references or AGD66 latitude/longitude. Particular efforts have been made to ensure this locality information is as accurate as possible by plotting these co-ordinates onto the relevant topographic or geologic maps using MapInfo and comparing the point with the locality description. Any typographical errors in the original publication have been noted in this column, and the locality co-ordinates in the database corrected accordingly. In some cases where only relatively imprecise co-ordinates were originally reported (e.g., latitude/longitude values accurate to 1 minute), more accurate co-ordinates were determined using the locality description and the relevant topographic or geologic maps, or using Google Earth. (GoogleEarth was particularly useful for locating quarries.) In a number of older publications the grid references are reported in yards. In these cases the AMG66 or AGD66 co-ordinates were usually determined by plotting the yard grid references on older maps that have imperial scales. These points were then replotted onto more recent geologic or topographic maps with metric scales. Some of the first edition 1:250 000 geological maps with both imperial and metric scales were particularly useful in this process. Sometimes older maps with imperial scales could not be obtained; in these cases, the yard grid reference was unable to be used; the AMG66/AGD66 co-ordinates were determined from the locality description and the relevant geologic or topographic map. A considerable number of publications do not provide any co-ordinates; in these cases, the co-ordinates were determined from the reported locality descriptions and/or locality maps, in combination with the relevant geologic and topographic maps, GoogleEarth, and the Geoscience Australia place name database.

- Probable Location Accuracy. Data in this column gives an idea of the accuracy of the co-ordinates. For example, if the co-ordinates were reported as latitude/longitude to the nearest minute, ‘1 minute’ is entered into this column. If no co-ordinates were originally reported, and the position was estimated from the locality data based on geographical information provided by the original authors, the accuracy of the locality was estimated based on the level of detail of the information provided.
- Locality co-ordinates. In most publications, the locality information is provided as either latitude/longitude or grid references, but rarely both. To make this database more useful and complete, grid references were calculated from latitude/longitude values (and visa versa) using Redfearn’s Formula available from Geoscience Australia (www.ga.gov.au/geodesy/datums/redfearn.xls). (Samples from Lord Howe Island and the Tasman Sea are exceptions, as grid references are not relevant.) The original co-ordinate format (i.e., grid reference or latitude/longitude) is provided in the ‘Source of co-ordinates’ column. Grid references and latitude/longitude values in this database are reported as AMG66 and AGD66, respectively, but can be converted to MGA94/GDA94 using files available from Geoscience Australia: (www.ga.gov.au/geodesy/datums/calcs.jsp#coords).
- 1:250000 Sheet. This column is not applicable for samples from Lord Howe Island, or for the Tasman Sea seamounts.
- Location Comments, as reported in the original reference.
- Altitude, in meters above sea level, where reported.
- Lab. Location, where available.
- Year analysed, where available.
- Reference

K-Ar

$^{40}Ar/^{39}Ar$

Rb–Sr

Field Number	Lab. Number	Catalogue Number	State	Volcanic Province	Rock Type	Volcano type	Rock Unit	Method	Age type and material dated	λ ^{87}Rb (10E-11/yr)	Age Reported (Ma)	Current Age used (Ma)	Age Error (Ma)	1 or 2 sigma error	Sample quality comments	Age Comment
Old Leopold	NA	NA	WA	WA lamproite	lamproite	WA lamproite	Fitzroy Volcanic	Rb-Sr	Isochron from 7 phlogopite analyses, 1 in	1.42	21.8	21.8	0.8	2σ	For a given locality sign	With the exception of two pe
Seltrust Pipe	NA	NA	WA	WA lamproite	lamproite	WA lamproite	Fitzroy Volcanic	Rb-Sr	Isochron from 4 phlogopite analyses.	1.42	23.9	23.9	0.8	2σ	For a given locality sign	Errorchron; two mica separa
Mt North	NA	NA	WA	WA lamproite	lamproite	WA lamproite	Fitzroy Volcanic	Rb-Sr	Isochron from 5 phlogopite analyses.	1.42	22.0	22.0	1.6	2σ	For a given locality sign	Rb-Sr age is in good agreem
Mt Rose	NA	NA	WA	WA lamproite	lamproite	WA lamproite	Fitzroy Volcanic	Rb-Sr	Isochron from 2 phlogopite analyses.	1.42	23.2	23.2	5	2σ	For a given locality sign	Only two mica separates an
Camels Hum	69-330, 7	NA	VIC	Macedon/Woode	soda trachyte	central		Rb-Sr	Isochron from 4 whole rock analyses.	1.39	6.3	6.2	0.6	not specified		Two samples from Hanging
Brocks Monu	69-332, 7	NA	VIC	Macedon/Woode	soda trachyte	central		Rb-Sr	Isochron from 3 whole rock analyses.	1.39	6.1	6.0		no error reported		Two samples from Hanging
80210047	NA	NA	WA	WA lamproite	phlogopite-le	WA lamproite	Fitzroy Volcanic	Rb-Sr	Isochron from whole rock-phlogopite pair	1.42	20.8	20.8		no error reported		Rb-Sr age is in reasonable a
79211054	NA	NA	WA	WA lamproite	phlogopite-le	WA lamproite	Fitzroy Volcanic	Rb-Sr	Isochron from whole rock-phlogopite pair	1.42	21.6	21.6		no error reported		Rb-Sr age is in reasonable a
81210184	NA	NA	WA	WA lamproite	phlogopite-di	WA lamproite	Fitzroy Volcanic	Rb-Sr	Isochron from whole rock-phlogopite pair	1.42	9.3	9.3		no error reported		Phlogopite from the Walgide
Ellendale No	NA	NA	WA	WA lamproite	phlogopite-ol	WA lamproite	Fitzroy Volcanic	Rb-Sr	Isochron from whole rock-phlogopite pair	1.42	13.0	13.0		no error reported		The near coincidence of tie
Ellendale No	NA	NA	WA	WA lamproite	phlogopite-ol	WA lamproite	Fitzroy Volcanic	Rb-Sr	Isochron from whole rock-phlogopite pair	1.42	25.2	25.2		no error reported		The near coincidence of tie
Ellendale No	NA	NA	WA	WA lamproite	phlogopite-ol	WA lamproite	Fitzroy Volcanic	Rb-Sr	Isochron from whole rock-phlogopite pair	1.42	23.3	23.3		no error reported		The near coincidence of tie

Field Number	1:250000 Sheet	Source of co-ordinates	Probable Location Accuracy	UTM Easting (AMG66)	UTM Northing (AMG66)	UTM zone	Longitude (AGD66)	Latitude (AGD66)	Location Comments	Altitude (m)	Lab. Location	Year analysed	Reference
Old Leopold	Lennard River	No co-ordinates reported; l	200m	804950	8027405	51	125.876707	-17.819751	Old Leopold Hill	NA	NA	NA	Allsopp, Bristow, Skinner, Scott Smith, Danchin (1985) Transactions of the Geological Society of South Africa v88 p341-345.
Seltrust Pipe	Lennard River	No co-ordinates reported; l	~5km	689989	8055563	51	124.790217	-17.578318	Seltrust Pipe 2	NA	NA	NA	Allsopp, Bristow, Skinner, Scott Smith, Danchin (1985) Transactions of the Geological Society of South Africa v88 p341-345.
Mt North	Lennard River	No co-ordinates reported; l	<500m	692517	8065635	51	124.813130	-17.487108	Mt North	NA	NA	NA	Allsopp, Bristow, Skinner, Scott Smith, Danchin (1985) Transactions of the Geological Society of South Africa v88 p341-345.
Mt Rose	Lennard River	No co-ordinates reported; l	<500m	759370	8060084	51	125.443060	-17.530500	Mt Rose	NA	NA	NA	Allsopp, Bristow, Skinner, Scott Smith, Danchin (1985) Transactions of the Geological Society of South Africa v88 p341-345.
Camels Hum	Melbourne	Latitude, longitude in AGD6	0.1 minute	287046	5860983	55	144.595000	-37.373333	Camels Hump in Mace	NA	ANU	1969	Dasch & Millar (1977) J. GSA v 24 p195-201.
Brocks Monu	Melbourne	Latitude, longitude in AGD6	0.1 minute	294492	5864500	55	144.680000	-37.343333	Brocks Monument in M	NA	ANU	1969	Dasch & Millar (1977) J. GSA v 24 p195-201.
80210047	Lennard River	AMG66 grid reference	100m	704400	8051300	51	124.926367	-17.615557	Mt Percy, SE side of hi	NA	"The bulk of t	NA	Jaques, Webb, Fanning, Black, Pidgeon, Ferguson, Smith & Gregory (1984), BMR Journal of Australian Geology & Geophysics, v9 p1-7.
79211054	Lennard River	AMG66 grid reference	100m	699400	8050400	51	124.879348	-17.624142	81-Mile Vent, fitzroyite	NA	"The bulk of t	NA	Jaques, Webb, Fanning, Black, Pidgeon, Ferguson, Smith & Gregory (1984), BMR Journal of Australian Geology & Geophysics, v9 p1-7.
81210184	Noonkanbah	AMG66 grid reference	100m	698200	7975200	51	124.875196	-18.303591	Walgidee Hills, NE mar	NA	"The bulk of t	NA	Jaques, Webb, Fanning, Black, Pidgeon, Ferguson, Smith & Gregory (1984), BMR Journal of Australian Geology & Geophysics, v9 p1-7.
Ellendale No	Lennard River	AMG66 grid reference	100m	696672	8057077	51	124.853031	-17.564064	Ellendale No. 9, centre	NA	"The bulk of t	NA	Jaques, Webb, Fanning, Black, Pidgeon, Ferguson, Smith & Gregory (1984), BMR Journal of Australian Geology & Geophysics, v9 p1-7.
Ellendale No	Lennard River	AMG66 grid reference	100m	696672	8057077	51	124.853031	-17.564064	Ellendale No. 9, centre	NA	"The bulk of t	NA	Jaques, Webb, Fanning, Black, Pidgeon, Ferguson, Smith & Gregory (1984), BMR Journal of Australian Geology & Geophysics, v9 p1-7.
Ellendale No	Lennard River	AMG66 grid reference	100m	696672	8057077	51	124.853031	-17.564064	Ellendale No. 9, centre	NA	"The bulk of t	NA	Jaques, Webb, Fanning, Black, Pidgeon, Ferguson, Smith & Gregory (1984), BMR Journal of Australian Geology & Geophysics, v9 p1-7.

U–Pb

Fission Track

^{14}C

Field Number	Lab. Number	Catalogue Number	State	Volcanic Province	Rock Type	Volcano ty	Rock Unit	Method	Material dated	C-14 half life	Age Report (uncalibrated y	Current Age us (uncalibrated yea	Age Erro (yea	1 or 2 sigma error	Age Comment	1:250000 Sheet	Source of co-ordinates	Probable Location Accurac	UTI Easti (AMG	UTI Northi (AMG	UTM zone	Longitu (AGD	Latitud (AGD	Location Comments	Altitude (m	Lab. Location	Year analysed	Reference
VB 40-50	ANU2125	NA	SA	Newer Volcanics	organic mud	lava field		C-14 (conven	organic mud	not specified	2960	2960	90	1σ	Does not represent an eruption age as	Penola	No co-ordinates reported; AGD6	<300m	479512	5811893	54	140.767151	-37.840032	drillcores in Valley Lake, Mt Gambier	NA	ANU	NA	Barton & McElhinny (1980) Trans. R. Soc South Australia v 104 p 161-165.
VB 80-90	ANU2126	NA	SA	Newer Volcanics	organic mud	lava field		C-14 (conven	organic mud	not specified	3960	3960	80	1σ	Does not represent an eruption age as	Penola	No co-ordinates reported; AGD6	<300m	479512	5811893	54	140.767151	-37.840032	drillcores in Valley Lake, Mt Gambier	NA	ANU	NA	Barton & McElhinny (1980) Trans. R. Soc South Australia v 104 p 161-165.
VB 110-120	ANU2052	NA	SA	Newer Volcanics	organic mud	lava field		C-14 (conven	organic mud	not specified	6180	6180	80	1σ		Penola	No co-ordinates reported; AGD6	<300m	479512	5811893	54	140.767151	-37.840032	drillcores in Valley Lake, Mt Gambier	NA	ANU	NA	Barton & McElhinny (1980) Trans. R. Soc South Australia v 104 p 161-165.
VA 117-122	ANU2051	NA	SA	Newer Volcanics	aragonite (organic)	lava field		C-14 (conven	aragonite (organic)	not specified	13900	13900	370	1σ	Yielded barely sufficient organic carbon	Penola	No co-ordinates reported; AGD6	<300m	479512	5811893	54	140.767151	-37.840032	drillcores in Valley Lake, Mt Gambier	NA	ANU	NA	Barton & McElhinny (1980) Trans. R. Soc South Australia v 104 p 161-165.
VA 117-122	ANU2051	NA	SA	Newer Volcanics	aragonite (inorganic)	lava field		C-14 (conven	aragonite (inorganic)	not specified	15450	15450	160	1σ	Maximum age - probably contains anci	Penola	No co-ordinates reported; AGD6	<300m	479512	5811893	54	140.767151	-37.840032	drillcores in Valley Lake, Mt Gambier	NA	ANU	NA	Barton & McElhinny (1980) Trans. R. Soc South Australia v 104 p 161-165.
VD 107-151	ANU1809	NA	SA	Newer Volcanics	calcareous tuff	lava field		C-14 (conven	calcareous tuff	not specified	38400	38400	plus 0.0041	1σ	Yielded barely sufficient organic carbon	Penola	No co-ordinates reported; AGD6	<300m	479512	5811893	54	140.767151	-37.840032	drillcores in Valley Lake, Mt Gambier	NA	ANU	NA	Barton & McElhinny (1980) Trans. R. Soc South Australia v 104 p 161-165.
1	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; acid pre-tre	5568 years	400	400	210	1σ	Modern charcoal - not related to Mt Ga	Penola	No co-ordinates reported; AGD6	500m	485868	5810733	54	140.839363	-37.850608	5km E of Blue Lake, outer zone of ea	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
2	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; acid pre-tre	5568 years	7160	7160	250	1σ	May be older than tuff (i.e., predates M	Penola	No co-ordinates reported; AGD6	500m	482339	5807591	54	140.799181	-37.878865	4km SSE of Blue Lake, inner zone of	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
2	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; alkali pre-tr	5568 years	7260	7260	250	1σ	May be older than tuff (i.e., predates M	Penola	No co-ordinates reported; AGD6	500m	482340	5807591	54	140.799181	-37.878865	4km SSE of Blue Lake, inner zone of	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
3	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; acid pre-tre	5568 years	7590	7590	240	1σ	Provides maximum age for tuff. No sigr	Penola	No co-ordinates reported; AGD6	500m	481683	5815760	54	140.791922	-37.805231	5km NNE of Blue Lake, outer zone o	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
3	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; alkali pre-tr	5568 years	7500	7500	150	1σ	Provides maximum age for tuff. No sigr	Penola	No co-ordinates reported; AGD6	500m	481683	5815760	54	140.791922	-37.805231	5km NNE of Blue Lake, outer zone o	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
4	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; acid pre-tre	5568 years	740	740	210	1σ	Modern charcoal - not related to Mt Ga	Penola	No co-ordinates reported; AGD6	500m	482932	5818696	54	140.806180	-37.778787	8km NNE of Blue Lake, outer zone o	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
5	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; acid pre-tre	5568 years	3470	3470	220	1σ	Sample is unsatisfactory to indicate the	Penola	No co-ordinates reported; AGD6	500m	480954	5815240	54	140.783626	-37.809897	4km N of Blue Lake, outer zone of ea	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
6	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; alkali pre-tr	5568 years	350	350	200	1σ	Modern charcoal - not related to Mt Ga	Penola	No co-ordinates reported; AGD6	500m	480954	5815240	54	140.783626	-37.809897	4km N of Blue Lake, outer zone of ea	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
7	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; acid pre-tre	5568 years	5590	5590	230	1σ	No significant difference in ages from a	Penola	No co-ordinates reported; AGD6	500m	479517	5805946	54	140.767034	-37.893639	5km SSW of Blue Lake, outer zone o	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
7	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; alkali pre-tr	5568 years	5500	5500	245	1σ	No significant difference in ages from a	Penola	No co-ordinates reported; AGD6	500m	479517	5805946	54	140.767034	-37.893639	5km SSW of Blue Lake, outer zone o	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
8	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; alkali pre-tr	5568 years	4970	4970	240	1σ	The samples analysed by Blackburn et	Penola	No co-ordinates reported; AGD6	500m	480706	5813715	54	140.780774	-37.823638	2.5km N of Blue Lake, inner zone of	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
9	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; acid pre-tre	5568 years	4030	4030	285	1σ	The samples analysed by Blackburn et	Penola	No co-ordinates reported; AGD6	500m	480706	5813715	54	140.780774	-37.823638	2.5km N of Blue Lake, inner zone of	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
10	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; acid pre-tre	5568 years	4350	4350	230	1σ	Alkali pretreatment gave younger age	Penola	No co-ordinates reported; AGD6	500m	481811	5809259	54	140.793218	-37.863826	2km SE of Blue Lake, inner zone of	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
10	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; alkali pre-tr	5568 years	3310	3310	200	1σ	Alkali pretreatment gave younger age	Penola	No co-ordinates reported; AGD6	500m	481811	5809259	54	140.793218	-37.863826	2km SE of Blue Lake, inner zone of	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
11	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; acid pre-tre	5568 years	8050	8050	260	1σ	This charcoal is likely to have been pro	Penola	No co-ordinates reported; AGD6	500m	481297	5814953	54	140.787514	-37.812490	4km NNE of Blue Lake, outer zone o	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
11	NA	NA	SA	Newer Volcanics	charcoal in sandy palae	lava field		C-14 (conven	charcoal; alkali pre-tr	5568 years	6500	6500	240	1σ	This charcoal is likely to have been pro	Penola	No co-ordinates reported; AGD6	500m	481297	5814953	54	140.787514	-37.812490	4km NNE of Blue Lake, outer zone o	NA	NA	NA	Blackburn, Allison, Leaney (1982) Transactions of the R. Soc. of South Australia v106 p163-167.
NA	Beta-9902	NA	VIC	Newer Volcanics	basal swamp sediment	lava field		C-14 (conven	carbon from basal sw	not specified	9980	9980	140	not specifi	These sediments are free from carbona	Hamilton	AGD66 lat/long determined fron	200m	619284	5757542	54	142.364580	-38.322175	Tower Hill; basal swamp sediments c	NA	NA	NA	Edney et al (1985) Search v16 #9-12 p302-303.
NA	Beta-9903	NA	VIC	Newer Volcanics	sediment	lava field		C-14 (conven	carbon	not specified	7400	7400	90	not specifi	Does not represent an eruption age as	Hamilton	AGD66 lat/long determined fron	200m	617943	5757165	54	142.349309	-38.325755	Tower Hill; sediment 700cm below la	NA	NA	NA	Edney et al (1985) Search v16 #9-12 p302-303.
NA	ARL-159	NA	VIC	Newer Volcanics	sediment	lava field		C-14 (conven	carbon from sedimen	not specified	11400	11400	200	not specified		Hamilton	AGD66 lat/long determined fron	200m	617943	5757165	54	142.349309	-38.325755	Tower Hill; sediment ~950cm below l	NA	NA	NA	Edney et al (1985) Search v16 #9-12 p302-303.
NA	GaK-3706	NA	VIC	Newer Volcanics	peat in swamp formed l	lava field		C-14 (conven	basal peat layer	not specified	7240	7240	140	not specifi	Minimum age for volcanism; material fr	Hamilton	No co-ordinates reported; AGD6	1km	598390	5811712	54	142.118154	-37.836591	Basal peat layer in Buckleys Swamp	NA	NA	NA	Gill & Elmore (1973) Victorian Naturalist v90 p304-306.
NA	GX-0150	NA	VIC	Newer Volcanics	peat in Condah swamp	lava field		C-14 (conven	peat	not specified	6235	6235	120	not specifi	Minimum age for volcanism from peat	Hamilton	No co-ordinates reported; AGD6	2km	573292	5794937	54	141.834660	-37.990128	Peat from 5-6ft depth, Condah Swam	NA	NA	NA	Gill & Gibbons (1969) Australian Journal of Science v32, p109-110.
CS5	SUA-2587	NA	VIC	Newer Volcanics	lake muds	lava field		C-14 (conven	carbon	not specified	26240	26240	480	not specifi	minimum age for Mt Eccles flow	Hamilton	No co-ordinates reported; AGD6	<300m	572803	5794507	54	141.829136	-37.994045	Near basal (450-470cm depth) sedim	NA	NA	NA	Head, D'Costa, Edney (1991): The Cainozoic of Australia: A re-appraisal of the evidence. p302-308.
WS1	SUA-2583	NA	VIC	Newer Volcanics	semi-fibrous peat	lava field		C-14 (conven	peat	not specified	27510	27510	240	not specifi	minimum age for Mt Eccles flow	Hamilton	No co-ordinates reported; AGD6	<300m	568697	5786358	54	141.783161	-38.067801	Semi-fibrous peat layer under lake m	NA	NA	NA	Head, D'Costa, Edney (1991): The Cainozoic of Australia: A re-appraisal of the evidence. p302-308.
NA	Beta 16156	NA	VIC	Newer Volcanics	sediment	lava field		C-14 (conven	organic fraction	not specified	18330	18330	260	not specifi	minimum ages for Tower Hill	Hamilton	No co-ordinates reported; AGD6	<200m	618659	5758474	54	142.357279	-38.313864	North West Crater drillcore sediment	NA	NA	NA	Head, D'Costa, Edney (1991): The Cainozoic of Australia: A re-appraisal of the evidence. p302-308.
NA	Beta 16155	NA	VIC	Newer Volcanics	sediment	lava field		C-14 (conven	carbonate fraction	not specified	23260	23260	2540	not specifi	minimum ages for Tower Hill	Hamilton	No co-ordinates reported; AGD6	<200m	618659	5758474	54	142.357279	-38.313864	North West Crater drillcore sediment	NA	NA	NA	Head, D'Costa, Edney (1991): The Cainozoic of Australia: A re-appraisal of the evidence. p302-308.
Mt Gambier -	NA	NA	VIC	Newer Volcanics	sediment	lava field		C-14 (AMS)	carbon	not specified	28000	28000		not reported		Penola	No co-ordinates reported; AGD6	<500m	480505	5811030	54	140.778417	-37.847839	Base of section 2, Blue Lake, Mt Gar	NA	Lawerence l	NA	Leaney et al (1995), Palaeogeography, Palaeoclimatalogy, Palaeoecology, v118 p111-130
NWC (97) 22	Wk-6012	NA	VIC	Newer Volcanics	basal lake sediments	lava field		C-14 (AMS)	basal lake sediments	not specified	29720	29720	290	1σ	The calibrated age using Voelker *et al*	Hamilton	No co-ordinates reported - AMG	<300m	618659	5758474	54	142.357279	-38.313864	Northwest Crater of Tower Hill, at de	NA	University of	NA	Sherwood, Oyston, Kershaw (2004), P Royal Society of Victoria, v116, p69-76.
A: Davidsons	Wk-7446	NA	VIC	Newer Volcanics	plant material under 20	lava field		C-14 (conven	plant material under 2	not specified	32900	32900	430	1σ	The calibrated age using Voelker *et al*	Hamilton	No co-ordinates reported - AMG	<300m	621983	5758470	54	142.395295	-38.313451	Davidsons Quarry, east of Tower Hill	NA	University of	NA	Sherwood, Oyston, Kershaw (2004), P Royal Society of Victoria, v116, p69-76.
B: Davidsons	Wk-7447	NA	VIC	Newer Volcanics	plant material under 20	lava field		C-14 (conven	plant material under 2	not specified	32900	32900	590	1σ	The calibrated age using Voelker *et al*	Hamilton	No co-ordinates reported - AMG	<300m	621983	5758470	54	142.395295	-38.313451	Davidsons Quarry, east of Tower Hill	NA	University of	NA	Sherwood, Oyston, Kershaw (2004), P Royal Society of Victoria, v116, p69-76.
NA	NA	NA	QLD	Atherton	sediment	lava field		"extrapolatior	sediments	not specified	190000	190000		not reporte	minimum age for eruption	Innisfail	AMG66 grid reference in Whitet	100m	360300	8079300	55	145.685074	-17.367539	Lynchs Crater	NA	NA	NA	Whitehead *et al.* (2007) AJES v54 p691-709, from Kershaw *et al.* (1991) in The Cainozoic of Australia: a Re-apprasial of the evidence pp299
NA	NA	NA	QLD	Atherton	sediment	lava field		C-14 (conven	basal sediments that	not specified	23000	23000		not reporte	minimum age for eruption	Innisfail	AMG66 grid reference in Whitet	100m	354100	8102200	55	145.628259	-17.160207	Lake Euramoo	NA	NA	NA	Whitehead *et al.* (2007) AJES v54 p691-709, from Haberle (2005) Auaternary Research v64 p343-356
NA	NA	NA	QLD	Atherton	sediment	lava field		C-14 (conven	sediments	not specified	17300	17300		not reporte	minimum age for eruption	Innisfail	AMG66 grid reference in Whitet	100m	354800	8092100	55	145.634170	-17.251523	Lake Barrine	NA	NA	NA	Whitehead *et al.* (2007) AJES v54 p691-709, from Head *et al.* (1994) Radiocarbon v36 p73-94
NA	NA	NA	QLD	Atherton	sediment	lava field		C-14 (conven	sediments	not specified	10630	10630	120	not specifi	minimum age for eruption	Innisfail	AMG66 grid reference in Whitet	100m	345000	8077800	55	145.540987	-17.380095	Bromfield Swamp	NA	NA	NA	Whitehead *et al.* (2007) AJES v54 p691-709, from Kershaw (1975) New Phytologist v75 p173-191
NA	NA	NA	QLD	Atherton	sediment	lava field		C-14 (conven	sediments	not specified	9130	9130		not reporte	minimum age for eruption	Innisfail	AMG66 grid reference in Whitet	100m	353700	8088300	55	145.623570	-17.285792	Lake Eacham	NA	NA	NA	Whitehead *et al.* (2007) AJES v54 p691-709, from Head *et al.* (1994) Radiocarbon v36 p73-94
NA	NA	NA	QLD	Atherton	sediment	lava field		C-14 (conven	sediments	not specified	7250	7250		not reporte	minimum age for eruption	Innisfail	AMG66 grid reference in Whitet	100m	349100	8086300	55	145.580163	-17.303563	Mt Quincan	NA	NA	NA	Whitehead *et al.* (2007) AJES v54 p691-709, from Kershaw (1971) New Phytologist v70 p669-681

Thermoluminescence

Field Number	Lab. Number	Catalogue Number	State	Volcanic Province	Rock Type	Volcano type	Rock Unit	Method	Material dated	Equivalent Dose (Gy)	Equivalent Dose Error (Gy)	Dose Rate (Gy/ka)	Dose Rate Error (Gy/ka)	Age Reported (Ma)	Current Age used (Ma)	Age Error (Ma)	1 or 2 sigma error	Age Comment	1:250000 Sheet	Source of co-ordinates	Probable Location Accuracy	UTM Easting (AMG66)	UTM Northing (AMG66)	UTM zone	Longitude (AGD66)	Latitude (AGD66)	Location Comments	Altitude (m)	Lab. Location	Year analysed	Reference
MG2t/1	95042	NA	SA	Newer Volcan	heated tuff deposits	lava field		thermoluminescence - heated	quartz	9.46	0.47	2.60	0.03	0.00364	0.00364	0.00025	not specified		Penola	No co-ordinates reporte	~200m	480067	5811275	54	140.773443	-37.845621	Blue Lake pump house	NA	UniAdelaide	NA	Robertson, Prescott, & Hutton (1996). Trans. R. Soc. South Australia v 120 p7-12.
MG2S/1	95043	NA	SA	Newer Volcan	Bridgewater Formation s	lava field		thermoluminescence - heated	quartz	9.13	0.32	1.45	0.03	0.00629	0.00629	0.00025	not specified		Penola	No co-ordinates reporte	~200m	480067	5811275	54	140.773443	-37.845621	Blue Lake pump house	NA	UniAdelaide	NA	Robertson, Prescott, & Hutton (1996). Trans. R. Soc. South Australia v 120 p7-12.
MG2c/12	95044	NA	SA	Newer Volcan	upper tuff (c. 20m above	lava field		thermoluminescence - heated	quartz	345	35	1.39	0.04	0.25	0.25	0.03	not specified	age is too old, probably due t	Penola	No co-ordinates reporte	~200m	480067	5811275	54	140.773443	-37.845621	Blue Lake cliff behind pump house	NA	UniAdelaide	NA	Robertson, Prescott, & Hutton (1996). Trans. R. Soc. South Australia v 120 p7-12.
MG2d/12	95045	NA	SA	Newer Volcan	banded upper tuff (same	lava field		thermoluminescence - heated	quartz	82	10	1.50	0.14	0.055	0.055	0.012	not specified	age is too old, probably due t	Penola	No co-ordinates reporte	~200m	480067	5811275	54	140.773443	-37.845621	Blue Lake carpark	NA	UniAdelaide	NA	Robertson, Prescott, & Hutton (1996). Trans. R. Soc. South Australia v 120 p7-12.
MG5S/0.1	95039	NA	SA	Newer Volcan	baked tuff below basalt (	lava field		thermoluminescence - heated	quartz	15.7	1.3	3.20	0.17	0.00491	0.00491	0.00048	not specified		Penola	No co-ordinates reporte	~200m	479846	5811861	54	140.770944	-37.840335	Valley Lake, Nurses Landing	NA	UniAdelaide	NA	Robertson, Prescott, & Hutton (1996). Trans. R. Soc. South Australia v 120 p7-12.
MG5S/0.3	95040a	NA	SA	Newer Volcan	baked tuff below basalt (	lava field		thermoluminescence - heated	quartz	14.1	1.3	3.46	0.05	0.00408	0.00408	0.00038	not specified		Penola	No co-ordinates reporte	~200m	479846	5811861	54	140.770944	-37.840335	Valley Lake, Nurses Landing	NA	UniAdelaide	NA	Robertson, Prescott, & Hutton (1996). Trans. R. Soc. South Australia v 120 p7-12.
MG5S/0.3	95040b	NA	SA	Newer Volcan	baked tuff below basalt (	lava field		thermoluminescence - heated	quartz	23.9	2.5	3.46	0.05	0.00718	0.00718	0.00075	not specified	may indicate an older event a	Penola	No co-ordinates reporte	~200m	479846	5811861	54	140.770944	-37.840335	Valley Lake, Nurses Landing	NA	UniAdelaide	NA	Robertson, Prescott, & Hutton (1996). Trans. R. Soc. South Australia v 120 p7-12.
MG5S/1.5	95041	NA	SA	Newer Volcan	baked tuff below basalt (	lava field		thermoluminescence - heated	quartz	240	40	2.46	0.06	0.098	0.098	0.015	not specified	age is too old, probably due t	Penola	No co-ordinates reporte	~200m	479846	5811861	54	140.770944	-37.840335	Valley Lake, Nurses Landing	NA	UniAdelaide	NA	Robertson, Prescott, & Hutton (1996). Trans. R. Soc. South Australia v 120 p7-12.
MG6S/60	95046	NA	SA	Newer Volcan	tuff, sunlight bleached	lava field		thermoluminescence - selective bleach	quartz	14.16	0.60	1.74	0.06	0.00814	0.00814	0.00044	not specified	may indicate an older event a	Penola	No co-ordinates reporte	~1km	479921	5809285	54	140.771729	-37.863550	2km S of Mt Gambier	NA	UniAdelaide	NA	Robertson, Prescott, & Hutton (1996). Trans. R. Soc. South Australia v 120 p7-12.
SC10S/0.6	95047	NA	SA	Newer Volcan	hard tuff layer	lava field		thermoluminescence - selective bleach	quartz	3.21	0.20	2.03	0.08	0.00158	0.00158	0.00012	not specified	This young date for Mt Schan	Penola	No co-ordinates reporte	<500m	478120	5800605	54	140.750994	-37.941737	1km east of Mt Schank	NA	UniAdelaide	NA	Robertson, Prescott, & Hutton (1996). Trans. R. Soc. South Australia v 120 p7-12.
SC12S/a	95048	NA	SA	Newer Volcan	hard layer of bedded tuff	lava field		thermoluminescence - selective bleach	quartz	2.23	0.84	1.76	0.06	0.00127	0.00127	0.00048	not specified	This young date for Mt Schan	Penola	No co-ordinates reporte	<500m	478120	5800605	54	140.750994	-37.941737	1km east of Mt Schank	NA	UniAdelaide	NA	Robertson, Prescott, & Hutton (1996). Trans. R. Soc. South Australia v 120 p7-12.
WTPA5	NA	NA	VIC	Newer Volcan	buried sand beneath Tow	lava field		thermoluminescence, total bleach, Australia	quartz sand	20.6	0.9	0.639	0.036	0.032	0.032	0.003	not specified	Thermoluminescence age ag	Hamilton	No co-ordinates reporte	200m	628023	5748911	54	142.466097	-38.398728	Thunder Point, immediately beneath	12	NA	NA	Sherwood, Oyston, Kershaw (2004), P Royal Society of Victoria, v116, p69-76.
SC3/5	AdTL 830	NA	SA	Newer Volcan	quartz sand underlying M	lava field		thermoluminescence	quartz sand	19.5	1.8	3.79	0.34	0.00515	0.00515	0.00068	not specified	Average age is 4930 ± 540 y	Penola	No co-ordinates reporte	<300m	476212	5800640	54	140.726908	-37.941374	From a sand layer <1m thick between	NA	UniAdelaide	NA	Smith & Prescott (1987) AJES v 34 p335-342.
SC3/6	AdTL 830	NA	SA	Newer Volcan	quartz sand underlying M	lava field		thermoluminescence	quartz sand	18.4	1.2	3.85	0.33	0.00478	0.00478	0.00057	not specified	Average age is 4930 ± 540 y	Penola	No co-ordinates reporte	<300m	476212	5800640	54	140.726908	-37.941374	From a sand layer <1m thick between	NA	UniAdelaide	NA	Smith & Prescott (1987) AJES v 34 p335-342.

U–Th series

Field Number	Lab. Number	Catalogue Number	State	Volcanic Province	Rock Type	Volcano type	Rock Unit	Method	Material dat	232Th 230	232Th 230 er	230Th 232	230Th 232 er	Th (ppm)	U (ppm)	U/Th	238U 232	230Th 238	Age Report	Current Ag used	Ag Err (M	1 or 2 sigma error	Age Comment	1:250000 Sheet	Source of co-ordinates	Probable Location Accuracy	UTM Easti (AMG	UTM Northi (AMG	UTM zone	Longitu (AGD	Latitu (AGD	Location Comments	Altitude	Lab. Location	Year analysed	Reference
NA	9427	NA	QLD	Atherton	basalt (sensu lato)	lava field	Atherton Basalt	U-Th series	whole rock	207900	3158	0.894	0.014	2.882	0.847	0.294	0.922	0.97	>0.350	>0.350		no error reported	>0.350 Ma	Innisfail	AMG66 grid references	100m	348000	8088000	55	145.569934	-17.288128	Seven Sisters volcano, CSIRO Tower site, Yungal	NA	UQ U-Th series	NA	Whitehead, Stephenson, McDougall, Hopkins, Graham, Collerson, Johnson (2007) AJES v54 p691-709.
NA	9429	NA	QLD	Atherton	basalt (sensu lato)	lava field	Atherton Basalt	U-Th series	whole rock	217690	2698	0.854	0.011	2.990	0.777	0.260	0.815	1.048	0.080-0.110	0.080-0.110		no error reported	Age range: 0.080-0.1	Atherton	AMG66 grid references	100m	340200	8084500	55	145.496310	-17.319218	Wongabel 1 volcano, cinder cone, Wongabel State	NA	UQ U-Th series	NA	Whitehead, Stephenson, McDougall, Hopkins, Graham, Collerson, Johnson (2007) AJES v54 p691-709.
NA	9424	NA	QLD	Atherton	basalt (sensu lato)	lava field	Atherton Basalt	U-Th series	whole rock	219646	2539	0.846	0.009	3.979	1.029	0.259	0.811	1.044	0.080-0.110	0.080-0.110		no error reported	Age range: 0.080-0.1	Innisfail	AMG66 grid references	100m	351100	8105600	55	145.600290	-17.129289	Kauri Creek volcano, cinder cone, Danbulla Fores	NA	UQ U-Th series	NA	Whitehead, Stephenson, McDougall, Hopkins, Graham, Collerson, Johnson (2007) AJES v54 p691-709.
NA	9426	NA	QLD	Atherton	basalt (sensu lato)	lava field	Atherton Basalt	U-Th series	whole rock	218757	2229	0.850	0.009	2.632	0.759	0.259	0.812	1.047	0.080-0.110	0.080-0.110		no error reported	Age range: 0.080-0.1	Innisfail	AMG66 grid references	100m	357400	8099300	55	145.659091	-17.186622	Birthday Creek volcano, flow, Cathedral Fig Scien	NA	UQ U-Th series	NA	Whitehead, Stephenson, McDougall, Hopkins, Graham, Collerson, Johnson (2007) AJES v54 p691-709.

Cosmogenic isotopes

Field Number	Lab. Number	Catalogue Number	State	Volcanic Province	Rock Type	Volcano ty	Rock Unit	Method	Material dated	Age Report (I	Current Ag used (	Age Err (M	1 or 2 sigma error	Sample quality comments	Age Comment	1:250000 She	Source of co-ordinates	Probable Location Accuracy	UTM Easti (AMG	UTI Northi (AMC	UTM zone	Longitu (AGD	Latituc (AGD	Location Comments	Altitude (m)	Lab. Location	Year analysed	Reference
Mt Napier	NA	NA	VIC	Newer Volcanics	vesicular basalt	lava field		cosmogenic Cl-36	whole rock	0.0319	0.0319	0.0024	not specified	Frothy vesicular basalt with surfac	Cosmogenic exposure age is older tha	Hamilton	AGD66 lat/long report	500m	581466	5802424	54	141.926897	-37.921959	Harman Valley flow of Mt Napier	85	ANU - cosmogenic	NA	Stone, Peterson, Fifield, & Cresswell (1997). Proceedings of the Royal Society of Victoria v109 #2 p121-
Mt Porndon	NA	NA	VIC	Newer Volcanics	vesicular basalt	lava field		cosmogenic Cl-36	whole rock	0.0585	0.0585	0.005	not specified	Frothy vesicular basalt with surfac	See Stone *et al.* (1997) for additional	Colac	AGD66 lat/long report	<200m	698971	5757811	54	143.275582	-38.305609	Mt Porndon, high point of the crest of the basa	190	ANU - cosmogenic	NA	Stone, Peterson, Fifield, & Cresswell (1997). Proceedings of the Royal Society of Victoria v109 #2 p121-

APPENDIX 2: GEOCHRONOLOGICAL RESULTS FOR CENOZOIC WEATHERING IN AUSTRALIA

This Appendix is a Microsoft Excel document containing information about published Cenozoic geochronological ages for weathering profiles in Australia. Dates have been compiled from refereed papers and only one PhD theses. Some Mesozoic ages have been included in this database. For the $^{40}Ar/^{39}Ar$ results, ages have been calculated using the constants of Steiger & Jäger (1977).

Field Number	Lab. Number	Location	Mineral	Method	Age (Ma)	Age Error (Ma) (± 1σ)	Age Error (Ma) (± 2σ)	Age Comment	Location Accuracy	Easting/ Longitude	Northing/ Latitude	Zone (UTM)	Reference	Description
KID-1H	KID-1H	Kidston Gold Mine, Queensland	alunite	K-Ar	1.85	-	0.04	-		144˚ 09' E	18˚ 53' S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
KID-1E	KID-1E	Kidston Gold Mine, Queensland	alunite	K-Ar	1.61	-	0.04	-		144˚ 09' E	18˚ 53' S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
KID-1F	KID-1F	Kidston Gold Mine, Queensland	alunite	K-Ar	3.91	-	0.07	-		144˚ 09' E	18˚ 53' S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
KID-1J	KID-1J (1)	Kidston Gold Mine, Queensland	alunite	K-Ar	2.17	-	0.2	4.1± 0.2 (original age before correction)		144˚ 09' E	18˚ 53' S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
KID-1J	KID-1J (2)	Kidston Gold Mine, Queensland	alunite	K-Ar	2.17	-	0.2	4.1± 0.2 (original age before correction)		144˚ 09' E	18˚ 53' S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
LEY- 1A	LEY- 1A	Mt. Leyshon Gold Mine, Queensland	alunite	K-Ar	3.1	-	0.2	-		146˚ 17' E	20˚ 18'S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
LEY- 1C	LEY- 1C	Mt. Leyshon Gold Mine, Queensland	natroalunite	K-Ar	2.3	-	0.1	-		146˚ 17' E	20˚ 18'S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
NQLD-8B	NQLD-8B	Springsure	alunite	K-Ar	47	-	0.4	-		148˚ 13' E	21˚ 14' S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
SPR-2D	SPR-2D (1)	Springsure	alunite	K-Ar	49.3	-	0.4	51.9± 0.4 (original age before correction)		148˚ 13' E	21˚ 14' S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
SPR-2D	SPR-2D (2)	Springsure	alunite	K-Ar	49.3	-	0.5	52.1± 0.4 (original age before correction)		148˚ 13' E	21˚ 14' S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
SPR-2E	SPR-2E	Springsure	alunite	K-Ar	62	-	0.7	63.6± 0.7 (original age before correction)		148˚ 13' E	21˚ 14' S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
SIL-9B	SIL-9B	Stuart Creek, South Australia	alunite	K-Ar	15.6	-	0.3	-		134˚ 44' E	29˚ 01'S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
CO-2	CO-2	Coober Pedy, South Australia	alunite	K-Ar	11.8	-	0.2	-		134˚ 47' E	29˚ 01'S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
CO-82	CO-82	Coober Pedy, South Australia	alunite	K-Ar	15.8	-	0.2	-		134˚ 46' E	29˚ 02'S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
CO-96	CO-96	Coober Pedy, South Australia	alunite	K-Ar	17.9	-	0.5	-		134˚ 48' E	29˚ 01'S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
SIL-4E	SIL-4E	Stuart Creek, South Australia	alunite	K-Ar	11.1	-	0.1	-		137˚ 15'E	30˚ 00'S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
AN-5	AN-5	Andamooka, South Australia	alunite	K-Ar	8.4	-	0.1	-		137˚ 12'E	30˚ 29'S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
RM-142	RM-142	Port Noarlunga, South Australia	alunite	K-Ar	0.74	-	0.02	-		138˚ 29'E	35˚ 09'S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
RM-178	RM-178	Port Noarlunga, South Australia	alunite	K-Ar	0.74	-	0.01	-		138˚ 32'E	35˚ 05'S		BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
RM-208	RM-208	Port Noarlunga, South Australia	alunite	K-Ar	1.67	-	0.02	-		138˚ 50'E	34˚ 58'S	-	BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
GY-124	GY-124	Lake Chandler, Western Australia	alunite	K-Ar	0	-	0.4	42.4± 0.4 (original age before correction)		118˚ 26'E	31˚ 06'S	-	BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
GY-199	GY-199	Lake Hann, Western Australia	alunite	K-Ar	0	-	0.3	13.4± 0.3 (original age before correction)		120˚ 20'E	32˚ 57'S	-	BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
KAN-3086	KAN-3086	Kanowna, Western Australia	alunite	K-Ar	4.87	-	0.06	-		121˚ 40'E	30˚ 38'S	-	BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
WHON HILL	WHON HILL	Wonyulgunna Hill, Western Australia	alunite	K-Ar	60.9	-	1	91.8± 1.0 (original age before correction)		119˚ 46'E	24˚ 49'S	-	BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
KINGS-1	KINGS-1	kingscote, Kangaroo Island, South Australia	alunite	K-Ar	6.25	-	0.07	-		137˚ 35'E	35˚ 40'S	-	BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
KINGS-2	KINGS-2	kingscote, Kangaroo Island, South Australia	alunite	K-Ar	12	-	0.2	15.3± 0.2 (original age before correction)		137˚ 35'E	35˚ 40'S	-	BIRD, M.I; CHIVAS, A.R & McDOUGALL, I. 1990.	
ABH102	ABH102	Groote Eylandt	whole rock (impure MnOx)	K-Ar	26.2	0.6	-	31.4± 0.3 (original age before correction)		136˚ 27.98'E	13˚ 59.9'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Very small ooliths weakly cemented with very fine grained pyrolusite; dated size fraction:0.3-0.5 mm.
ABH103	ABH103	Groote Eylandt	whole rock (impure MnOx)	K-Ar	29.5	0.4	-	32.5± 0.3 (original age before correction)		136˚ 27.98'E	13˚ 59.9'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Loose small pisoliths and ooliths; dated size fraction: 1.0-2.4 mm.
ABH104	ABH104	Groote Eylandt	whole rock (impure MnOx)	K-Ar	26.1	0.7	-	32.5± 0.3 (original age before correction)		136˚ 27.98'E	13˚ 59.9'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Loose pisoliths and ooliths; dated size fraction: 1.0-2.4 mm.
ABH105	ABH105	Groote Eylandt	whole rock (impure MnOx), size fraction of ooliths (pisoliths): 4.8-15.0 mm.	K-Ar	14.4	0.6	-	20.1± 0.2 (original age before correction)		136˚ 27.98'E	13˚ 59.9'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Loose pisoliths and irregular clasts; dated size fractions: 2.4-4.8 and 4.8-15.0 mm.
ABH105	ABH105	Groote Eylandt	whole rock (impure MnOx), size fraction of ooliths (pisoliths): 2.4-4.8 mm.	K-Ar	17.6	0.7	-	24.0± 0.3 (original age before correction)		136˚ 27.98'E	13˚ 59.9'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Loose pisoliths and irregular clasts; dated size fractions: 2.4-4.8 and 4.8-15.0 mm.
ABH106	ABH106	Groote Eylandt	whole rock (impure MnOx)	K-Ar	15.6	0.4	-	20.3± 0.4 (original age before correction)		136˚ 27.98'E	13˚ 59.9'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Loose pisoliths; dated size fraction: 2.4-3.2 mm.
ABH106	**ABH106**	**Groote Eylandt**	**whole rock (impure MnOx)**	**K-Ar**	**16.1**	**0.4**	**-**	**20.8± 0.4 (original age before correction)**		**136˚ 27.98'E**	**13˚ 59.9'S**	**-**	**DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.**	Loose pisoliths; dated size fraction: 2.4-3.2 mm.
ABH107	ABH107	Groote Eylandt	whole rock (impure MnOx), size fraction of ooliths (pisoliths): 1.0-2.4 mm.	K-Ar	30.5	1.3	-	39.4± 0.4 (original age before correction)		136˚ 27.98'E	13˚ 59.9'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Loose pisoliths, ooliths and irregular clasts; dated size fractions:1.0-2.4, 2.4-3.2 and 3.2-4.8 mm.
ABH107	ABH107	Groote Eylandt	whole rock (impure MnOx), size fraction of ooliths (pisoliths): 3.2-4.8 mm.	K-Ar	22.2	1.7	-	36.7± 0.9 (original age before correction)		136˚ 27.98'E	13˚ 59.9'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Loose pisoliths, ooliths and irregular clasts; dated size fractions:1.0-2.4, 2.4-3.2 and 3.2-4.8 mm.
ABH107	ABH107	Groote Eylandt	whole rock (impure MnOx), size fraction of ooliths (pisoliths): 2.4-3.2 mm.	K-Ar	24.2	1.5	-	34.9± 1.5 (original age before correction)		136˚ 27.98'E	13˚ 59.9'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Loose pisoliths, ooliths and irregular clasts; dated size fractions:1.0-2.4, 2.4-3.2 and 3.2-4.8 mm.
ABH108	ABH108	Groote Eylandt	whole rock (impure MnOx)	K-Ar	43.7	1.2	-	54.1± 0.7 (original age before correction)		136˚ 27.26'E	13˚ 59.9'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Loose pisoliths and ooliths; dated size fraction: 1.0-2.36 mm.
ABH108	**ABH108**	**Groote Eylandt**	**whole rock (impure MnOx)**	**K-Ar**	**42.1**	**1.3**	**-**	**53.2± 0.7 (original age before correction)**		**136˚ 27.26'E**	**13˚ 59.9'S**	**-**	**DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.**	Loose pisoliths and ooliths; dated size fraction: 1.0-2.36 mm.
ABH119	ABH119	Groote Eylandt	whole rock (impure MnOx)	K-Ar	13	0.7	-	19.9± 0.2 (original age before correction)		136˚ 27.26'E	13˚ 56.38'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Massive cryptomelane from a bench cementing pisoliths.
ABH121	ABH121	Groote Eylandt	whole rock (impure MnOx)	K-Ar	14.1	1.2	-	25.6± 0.3 (original age before correction)		136˚ 27.98'E	13˚ 56.38'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Siliceous ore-quartz sand cemented by cryptomelane.
ABH122	ABH122	Groote Eylandt	whole rock (impure MnOx)	K-Ar	11.6	0.9	-	20.6± 0.2 (original age before correction)		136˚ 27.26'E	13˚ 56.38'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Pisoliths, strongly cemented and replaced by cryptomelane.
ABH123	ABH123	Groote Eylandt	whole rock (impure MnOx)	K-Ar	13.6	1.4	-	28.0± 1.2 (original age before correction)		136˚ 27.26'E	13˚ 56.38'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Loose pisoliths replaced by cryptomelane; size of pisoliths: 12.7-3.2mm.
ABH126	ABH126	Groote Eylandt	whole rock (impure MnOx)	K-Ar	12.8	0.5	-	17.4± 0.2 (original age before correction)		136˚ 27.26'E	13˚ 56.38'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Pisoliths, strongly cemented and replaced by cryptomelane.
ABH132	ABH132	Groote Eylandt	whole rock (impure MnOx)	K-Ar	6	0.8	-	13.5± 0.2 (original age before correction)		136˚ 27.44'E	13˚ 59.72'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Layer of platy fragments composed of cryptomelane, below Mn laterite, above smectitic clays.
ABH133	ABH133	Groote Eylandt	whole rock (impure MnOx)	K-Ar	6.7	1	-	15.2± 0.4 (original age before correction)		136˚ 27.98'E	13˚ 59.9'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Layer of platy fragments composed of cryptomelane, in the upper part of smectitic clays.
ABH139	ABH139	Groote Eylandt	whole rock (impure MnOx)	K-Ar	7.2	0.9	-	15.8± 0.2 (original age before correction)		136˚ 27.41'E	13˚ 57.69'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Bench of massive manganese ore composed of cryptolmelane, up to 30m thick, developed in kaolinitic clays; uppermost sample in this quarry.
ABH140	ABH140	Groote Eylandt	whole rock (impure MnOx)	K-Ar	11	1.5	-	24.8± 0.3 (original age before correction)		136˚ 27.41'E	13˚ 57.69'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Bench of massive manganese ore composed of cryptolmelane, up to 30m thick, developed in kaolinitic clays; middle sample in this quarry.
ABH142	ABH142	Groote Eylandt	whole rock (impure MnOx)	K-Ar	18.1	1.3	-	30.3± 0.3 (original age before correction)		136˚ 27.41'E	13˚ 57.69'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Bench of massive manganese ore composed of cryptolmelane, up to 30m thick, developed in kaolinitic clays; lowermost sample in this quarry.
ABH144	ABH144	Groote Eylandt	whole rock (impure MnOx)	K-Ar	9.9	0.9	-	18.5± 0.2 (original age before correction)		136˚ 27.41'E	13˚ 57.69'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Manganese concretion developed on the top the middle bench composed of cryptomelane in the form of matrix containing K silicates and densely intersected with syneresis cracks and voids filled with pure cryptomelane.
ABH144/I	ABH144/I	Groote Eylandt	Pure cryptomelane	K-Ar	8.6	0.1	-	8.6± 0.1 (original age before correction)		136˚ 27.41'E	13˚ 57.69'S	-	I.1996.	
ABH219	ABH219	Groote Eylandt	whole rock (impure MnOx)	K-Ar	15.1	3.3	-	46.4± 0.5 (original age before correction)		136˚ 27.98'E	13˚ 59.9'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Cave pearls, three elongated oval, layered bodies composed of cryptomelane; dimensions: (2-4) X (1-2) cm.
ABH144	ABH144 (1)	Groote Eylandt	pure reniform cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	9.4	0.1	-	-		136˚ 27.41'E	13˚ 57.69'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	Manganese concretion developed on the top the middle bench composed of cryptomelane in the form of matrix containing K silicates and densely intersected with syneresis cracks and voids filled with pure cryptomelane.
ABH144	ABH144 (1)	Groote Eylandt	pure reniform cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	9.26	0.06	-	-		136˚ 27.41'E	13˚ 57.69'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	
ABH144	ABH144 (1)	Groote Eylandt	pure reniform cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	9.15	0.05	-	-		136˚ 27.41'E	13˚ 57.69'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	
ABH144	ABH144 (2)	Groote Eylandt	pure reniform cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	8.52	0.05	-	-		136˚ 27.41'E	13˚ 57.69'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	
ABH144	ABH144 (2)	Groote Eylandt	pure reniform cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	8.3	0.06	-	-		136˚ 27.41'E	13˚ 57.69'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	
ABH144	ABH144 (2)	Groote Eylandt	pure reniform cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	7.03	0.05	-	-		136˚ 27.41'E	13˚ 57.69'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	
ABH144	ABH144 (3)	Groote Eylandt	pure reniform cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	7	0.1	-	-		136˚ 27.41'E	13˚ 57.69'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	

ABH144	ABH144 (3)	Groote Eylandt	pure reniform cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	6.5	0.2	-	-		136˚ 27.41'E	13˚ 57.69'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	
ABH144	ABH144 (3)	Groote Eylandt	pure reniform cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	6.4	0.7	-	-		136˚ 27.41'E	13˚ 57.69'S	-	DAMMER, D; CHIVAS, A.R. & McDOUGALL, I.1996.	
Mn8	-	Mount Isa gossan, Mount Isa, Queensland	manganese oxide	K-Ar	15.8	3	-			341823	7707558		VASCONCELOS, P. 1998. Geochronology of Weathering in the Mount Isa and Charters Towers Regions, Northern Queensland. *CRC Leme Restricted Report 68R/ E&M Report 452R.*	
Mn9	-	Mount Isa gossan, Mount Isa, Queensland	manganese oxide	K-Ar	17.8	4	-			341823	7707558		VASCONCELOS, P. 1998.	
Mn11	-	Mount Isa gossan, Mount Isa, Queensland	manganese oxide	K-Ar	20.5	2	-			341823	7707558		VASCONCELOS, P. 1998.	
MnPV	-	Mount Isa gossan, Mount Isa, Queensland	manganese oxide	K-Ar	17.1	1	-			341823	7707558		VASCONCELOS, P. 1998.	
Mn-09	Run 10006-01	Mount Isa gossan, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	20.7	0.2	-	Plateau Age		341823	7707558		VASCONCELOS, P. 1998.	Sample represents the overgrowth of a botryoidal Mn-oxide crust.
Mn-09	Run 10006-02	Mount Isa gossan, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	20.9	0.2	-	Plateau Age		341823	7707558		VASCONCELOS, P. 1998.	Sample represents the overgrowth of a botryoidal Mn-oxide crust.
Mn-09	Run 10007-01	Mount Isa gossan, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	21.5	0.3	-	Plateau Age		341823	7707558		VASCONCELOS, P. 1998.	Sample represents the inner bands of a botryoidal Mn-oxide crust.
Mn-09	Run 10007-02	Mount Isa gossan, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	21.2	0.5	-	Plateau Age		341823	7707558		VASCONCELOS, P. 1998.	Sample represents the inner bands of a botryoidal Mn-oxide crust.
Mn-04	Run 10018-02	Mount Isa gossan, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	16.7	0.2	-	Plateau Age		341823	7707558		VASCONCELOS, P. 1998.	
Mn-04	Run 10018-01	Mount Isa gossan, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	17.7	0.5	-	Plateau Age		341823	7707558		VASCONCELOS, P. 1998.	
Mn-08	Run 10056-01	Mount Isa gossan, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	14.57	0.12	-	Plateau Age		341823	7707558		VASCONCELOS, P. 1998.	
Mn-08	Run 10056-02	Mount Isa gossan, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	20.02	0.19	-	Plateau Age		341823	7707558		VASCONCELOS, P. 1998.	
2005b	Run 10053-01	Mount Isa gossan, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	-1.1	6.2	-	Plateau Age		341823	7707558		VASCONCELOS, P. 1998.	The "zero-age" abtained for the Mn-oxide sample collected next the Mount Isa Mines Exploration barrack could reflect very recent precipitation of Mn-oxides in the area. Alternatively, the "zero-age" could reflect lack of K in the sample.
LM-95-01	Run 10163-01	Lake Moondarra Prospect, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	19	0.4	-	Plateau Age		354500	7723600		VASCONCELOS, P. 1998.	
LM-95-01	Run 10163-02	Lake Moondarra Prospect, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	19.7	0.1	-	Plateau Age		354500	7723600		VASCONCELOS, P. 1998.	
LM-95-01	Run 10163-03	Lake Moondarra Prospect, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	20.7	0.3	-	Plateau Age		354500	7723600		VASCONCELOS, P. 1998.	
LM-95-01	Run 0079-01	Lake Moondarra Prospect, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	23.1	0.4	-	Plateau Age		341823	7707558		VASCONCELOS, P. 1998.	
LM-95-01	Run 0079-02	Lake Moondarra Prospect, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	21.6	0.6	-	Plateau Age		354500	7723600		VASCONCELOS, P. 1998.	
LM-95-01	Run 0079-03	Lake Moondarra Prospect, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	18.5	0.4	-	Plateau Age		354500	7723600		VASCONCELOS, P. 1998.	
LM-95-01	Run 0079-04	Lake Moondarra Prospect, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	24	0.7	-	Plateau Age		354500	7723600		VASCONCELOS, P. 1998.	
LM-95-01	Run 0079-05	Lake Moondarra Prospect, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	17.23	0.16	-	Plateau Age		341823	7707558		VASCONCELOS, P. 1998.	
LM-95-01	Run 0080-01	Lake Moondarra Prospect, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	22.3	0.6	-	Plateau Age		341823	7707558		VASCONCELOS, P. 1998.	
LM-95-01	Run 0080-02	Lake Moondarra Prospect, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	20.67	0.12	-	Plateau Age		341823	7707558		VASCONCELOS, P. 1998.	
M1-95-01	Run 0066-02	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	28	3	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-01	Run 0066-03	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	32	3	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-02a	Run 0067-01	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	63.5	0.2	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-02a	Run 0067-02	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	41.4	0.5	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-02a	Run 0067-03	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	37.8	0.7	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-04a	Run 0068-02	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	66.9	0.14	-	two grains analyzed from this sample do not yield well defined plateaus.		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-02a	Run 0069-02	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	30.8	0.5	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-02a	Run 0069-03	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	34.3	1.3	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-05a	Run 0070-03	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	30.7	1.9	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-05f	Run 0071-01	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	24.3	0.8	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-05d	Run 0074-01	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	16.7	0.7	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-05d	Run 0074-02	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	38.7	0.6	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-05d	Run 0074-03	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	13.2	0.9	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-06	Run 0075-01A	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	36.65	0.18	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
M1-95-06	Run 0075-03	Mesa 1 outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	30.2	0.4	-	Plateau Age		324605	7755409		VASCONCELOS, P. 1998.	
GC-95-01a	Run 10082-01	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	38.9	0.8	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
GC-95-01a	Run 10082-02	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	37.1	0.2	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
GC-95-01b	Run 10083-01	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	35.9	0.2	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
GC-95-01	Run 0077-01	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	33.2	1.3	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
GC-95-01	Run 0077-02	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	38.5	0.6	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
GC-95-01	Run 0077-03	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	39.1	0.7	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
GC-95-01	Run 0077-04	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	35.77	0.08	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
GC-95-01	Run 0077-05	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	41.6	0.6	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
GC-95-01	Run 0077-06	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	39.7	0.7	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
GC-95-02	Run 0085-01	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	30.5	0.2	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
GC-95-02	Run 0085-02	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	34.8	0.4	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
GC-95-02	Run 0085-04	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	34	8	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
GC-95-02	Run 0085-05	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	29.8	0.3	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
GC-95-02	Run 0085-06	Gunpowder Creek Road Outcrop, Kennedy Gap, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	38.7	1.1	-	Plateau Age		301550	7783000		VASCONCELOS, P. 1998.	
CE-26	-	Century Deposit, Lawn Hill Region, Mount Isa, Queensland	botryoidal manganese oxide	K-Ar	8.7	0.7	-			-	-		VASCONCELOS, P. 1998.	
CE-N	-	Century Deposit, Lawn Hill Region, Mount Isa, Queensland	botryoidal manganese oxide	K-Ar	5.6	1.5	-			-	-		VASCONCELOS, P. 1998.	
CE-R	-	Century Deposit, Lawn Hill Region, Mount Isa, Queensland	botryoidal manganese oxide	K-Ar	10.7	2.9	-			-	-		VASCONCELOS, P. 1998.	
CE-IL	-	Century Deposit, Lawn Hill Region, Mount Isa, Queensland	botryoidal manganese oxide	K-Ar	11.5	2.6	-			-	-		VASCONCELOS, P. 1998.	
CE-94-052	Run 10095-01	Century Deposit, Lawn Hill Region, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	5.63	0.12	-	Plateau Age		-	-		VASCONCELOS, P. 1998.	

CE-94-052	Run 10095-02	Century Deposit, Lawn Hill Region, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	8.05	0.06	-	Plateau Age		-	-		VASCONCELOS, P. 1998.	
CE-94-053	Run 10096-01	Century Deposit, Lawn Hill Region, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	6.4	0.2	-	Plateau Age		-	-		VASCONCELOS, P. 1998.	
CE-94-053	Run 10096-02	Century Deposit, Lawn Hill Region, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	6.64	0.03	-	Plateau Age		-	-		VASCONCELOS, P. 1998.	
CE-94-051	Run 10097-01	Century Deposit, Lawn Hill Region, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	9	0.3	-	Plateau Age		-	-		VASCONCELOS, P. 1998.	
C-94-06	Run 10098-01	Century Deposit, Lawn Hill Region, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	7.7	1.1	-	Plateau Age		-	-		VASCONCELOS, P. 1998.	
Con01	-	Overhang Deposit, Mount Isa, Queensland	botryoidal manganese oxide	K-Ar	80.3	6	-			343650	7679000		VASCONCELOS, P. 1998.	
Con03	-	Overhang Deposit, Mount Isa, Queensland	botryoidal manganese oxide	K-Ar	77	1	-			343650	7679000		VASCONCELOS, P. 1998.	
Con04	-	Overhang Deposit, Mount Isa, Queensland	botryoidal manganese oxide	K-Ar	81.8	2	-			343650	7679000		VASCONCELOS, P. 1998.	
CON-94-05	Run 10010x-01	Overhang Deposit, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	36.9	2	-	Plateau Age		343650	7679000		VASCONCELOS, P. 1998.	
CON-94-01	Run 10011-01	Overhang Deposit, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	57.4	1.4	-	Plateau Age		343650	7679000		VASCONCELOS, P. 1998.	
CON-94-01	Run 10011-02	Overhang Deposit, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	64.7	0.5	-	Plateau Age		343650	7679000		VASCONCELOS, P. 1998.	
SE-159	Run 10092-01	Selwyn Mine, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	43.8	1.2	-	Plateau Age		447188	7601545		VASCONCELOS, P. 1998.	
SE-159	Run 10092-02	Selwyn Mine, Mount Isa, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	41.1	0.3	-	Plateau Age		447188	7601545		VASCONCELOS, P. 1998.	
TH-04	Run 10084-01	TV Tower Mn-Breccia, Tick Hill Region, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	17.42	0.63	-	Plateau Age		392550	7604920		VASCONCELOS, P. 1998.	
TH-04	Run 10084-02	TV Tower Mn-Breccia, Tick Hill Region, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	16.37	0.13	-	Plateau Age		392550	7604920		VASCONCELOS, P. 1998.	
TH-04	Run 10085-01	TV Tower Mn-Breccia, Tick Hill Region, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	18.86	0.49	-	Plateau Age		392550	7604920		VASCONCELOS, P. 1998.	
TH-04	Run 10085-02	TV Tower Mn-Breccia, Tick Hill Region, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	18.07	0.46	-	Plateau Age		392550	7604920		VASCONCELOS, P. 1998.	
TH-04	Run 10093-01	TV Tower Mn-Breccia, Tick Hill Region, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	17.2	0.1	-	Plateau Age		392550	7604920		VASCONCELOS, P. 1998.	
TH-04	Run 10094-02	TV Tower Mn-Breccia, Tick Hill Region, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	18.42	0.09	-	Plateau Age		392550	7604920		VASCONCELOS, P. 1998.	
TH-04	Run 10094-01	TV Tower Mn-Breccia, Tick Hill Region, Queensland	botryoidal manganese oxide	$^{40}Ar/^{39}Ar$	16.32	0.33	-	Plateau Age		392550	7604920		VASCONCELOS, P. 1998.	
TG147	Run 10182-01	Tringadee Prospect, Cannington Area, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	12.8	0.1	-	Plateau Age		486108	7589140		VASCONCELOS, P. 1998.	
TG147	Run 10182-02	Tringadee Prospect, Cannington Area, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	12.7	0.2	-	Plateau Age		486108	7589140		VASCONCELOS, P. 1998.	
TG147	Run 10182-03	Tringadee Prospect, Cannington Area, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	12.6	0.2	-	Plateau Age		486108	7589140		VASCONCELOS, P. 1998.	
TG147	Run 10182-04	Tringadee Prospect, Cannington Area, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	12.8	0.2	-	Plateau Age		486108	7589140		VASCONCELOS, P. 1998.	
TG147	Run 10182-05	Tringadee Prospect, Cannington Area, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	12.6	0.1	-	Plateau Age		486108	7589140		VASCONCELOS, P. 1998.	
TG147	Run 10182-06	Tringadee Prospect, Cannington Area, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	13.1	0.2	-	Plateau Age		486108	7589140		VASCONCELOS, P. 1998.	
11-0445	Run 10166-01	Pegmont Prospect, Cannington Area, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	12.97	0.1	-	Plateau Age		467660	7683300		VASCONCELOS, P. 1998.	
11-0445	Run 10166-02	Pegmont Prospect, Cannington Area, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	13.8	0.1	-	Plateau Age		467660	7683300		VASCONCELOS, P. 1998.	
11-0446	Run 10167-01	Cowie Prospect, Cannington Area, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	12.7	0.1	-	Plateau Age		486108	7589140		VASCONCELOS, P. 1998.	
11-0446	Run 10167-02	Cowie Prospect, Cannington Area, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	12.3	0.3	-	Plateau Age		486108	7589140		VASCONCELOS, P. 1998.	
11-0446	Run 10167-03	Cowie Prospect, Cannington Area, Mount Isa, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	12.9	0.5	-	Plateau Age		486108	7589140		VASCONCELOS, P. 1998.	
CT-18	Run 0001-01	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	10.5	0.4	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-18	Run 0001-02	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	7.7	0.8	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-18	Run 0001-03	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	8.8	0.6	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-03	Run 0002-01	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	16.7	0.4	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-03	Run 0002-02	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	12.05	0.13	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-03	Run 0002-03	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	12.5	0.2	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-10	Run 0005-01	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	9.6	0.1	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-10	Run 0005-02	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	10.45	0.04	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-10	Run 0005-03	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	10.6	0.04	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-11	Run 0007-01	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	9.1	0.2	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-11	Run 0007-02	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	9.8	0.1	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-11	Run 0007-03	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	9.8	0.1	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-06	Run 0008-02	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	13.29	0.12	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-06	Run 0008-03	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	10.4	0.1	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-05	Run 0010-01	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	12.8	0.15	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-05	Run 0010-03	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	14.1	0.1	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-08	Run 0013-01	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	15.2	0.4	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-08	Run 0013-02	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	14.6	0.2	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-08	Run 0013-03	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	14.6	0.2	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-09	Run 0014-01	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	15.05	0.18	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-09	Run 0014-02	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	15.9	0.4	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-09	Run 0014-03	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	15.5	0.5	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-19	Run 0015-02	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	16	0.5	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-19	Run 0015-03	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	9.1	1.7	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-02	Run 0016-01	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	10.9	0.4	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-02	Run 0016-02	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	13.5	0.3	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-02	Run 0016-03	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	8.7	0.15	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-11	Run 0019-02	Scott Lode Pit, Charters Towers Region, Queensland	jarosite	$^{40}Ar/^{39}Ar$	3.21	0.1	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-94-11	Run 0019-01	Scott Lode Pit, Charters Towers Region, Queensland	jarosite	$^{40}Ar/^{39}Ar$	2.72	0.1	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-34	Run 0020-01	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	4.46	0.09	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-4	Run 0021-01	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	15.5	0.2	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-4	Run 0021-02	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	13.6	0.1	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-4	Run 0021-03	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	11.89	0.12	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-17	Run 0022-01	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	5.4	0.2	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
CT-17	Run 0022-02	Scott Lode Pit, Charters Towers Region, Queensland	manganese oxide	$^{40}Ar/^{39}Ar$	6.1	0.1	-	Plateau Age		147˚ 27' E	20˚ 32' S		VASCONCELOS, P. 1998.	
ABH165	ABH165	Woodie Woodie Deposit, Pilbara	K- bearing Mn oxides	K-Ar	51.1	0.5	-	51.7± 0.5 (original age before correction)		121˚ 13' 51.69" E	21˚ 38' 07.72" S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.Timing of Weathering-Induced Alteration of Manganese Deposits in Western Australia: Evidence from K/Ar and $^{40}Ar/^{39}Ar$ Dating. *Economic Geology* vol.94, pp.87-108.	
ABH166	ABH166	Woodie Woodie Deposit, Pilbara	oxides	K-Ar	39.3	0.5	-	41.8± 0.4 (original age before correction)		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.	
ABH168	ABH168	Woodie Woodie Deposit, Pilbara	oxides	K-Ar	18.2	0.4	-	18.8± 0.4 (original age before correction)		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.	
ABH169	ABH169	Woodie Woodie Deposit, Pilbara	oxides	K-Ar	48.5	0.8	-	49.9± 0.8 (original age before correction)		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.	
ABH170	ABH170	Woodie Woodie Deposit, Pilbara	oxides	K-Ar	35	0.4	-	35.0± 0.4 (original age before correction)		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.	
ABH174	ABH174	Woodie Woodie Deposit, Pilbara	oxides	K-Ar	27.8	0.3	-	27.8± 0.3 (original age before correction)		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.	
ABH183	ABH183	Mt Sydney Deposit, Pilbara	oxides	K-Ar	48.2	0.9	-	49.2± 0.6 (original age before correction)		121˚ 11' E	21˚ 4' S		A.R.1999.	

ABH184	ABH184	Mt Sydney Deposit, Pilbara	oxides	K-Ar	14.4	0.3	-	15.1± 0.3 (original age before correction)		121˚ 11' E	21˚ 4' S		A.R.1999.
ABH185	ABH185	Mt Sydney Deposit, Pilbara	oxides	K-Ar	9.2	0.3	-	10.9± 0.1 (original age before correction)		121˚ 11' E	21˚ 4' S		A.R.1999.
ABH186	ABH186	Mt Sydney Deposit, Pilbara	oxides	K-Ar	13.3	0.2	-	13.4± 0.2 (original age before correction)		121˚ 11' E	21˚ 4' S		A.R.1999.
ABH187	ABH187	Mt Sydney Deposit, Pilbara	oxides	K-Ar	15.4	0.2	-	15.5± 0.2 (original age before correction)		121˚ 11' E	21˚ 4' S		A.R.1999.
ABH188	ABH188	Mt Sydney Deposit, Pilbara	oxides	K-Ar	18.9	0.2	-	19.8± 0.2 (original age before correction)		121˚ 11' E	21˚ 4' S		A.R.1999.
MD91	MD91	Elsa Prospect, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	K-Ar	33.4	0.4	-	33.4± 0.4 (original age before correction)		125˚ 18' E	19˚ 11' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
MD92	MD92	Elsa Prospect, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	K-Ar	30	0.5	-	30.0± 0.5 (original age before correction)		125˚ 18' E	19˚ 11' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
MD93	MD93	Elsa Prospect, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	K-Ar	34.9	0.4	-	34.9± 0.4 (original age before correction)		125˚ 18' E	19˚ 11' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
MD94/A	MD94/A	Elsa Prospect, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	K-Ar	32	0.3	-	32.0± 0.3 (original age before correction)		125˚ 18' E	19˚ 11' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
MD94/A	MD94/A	Elsa Prospect, Peak Hill Mn Province, Yilgarn craton	hollandite-pyrolusite	K-Ar	31.9	0.3	-	31.8± 0.3 (original age before correction)		125˚ 18' E	19˚ 11' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
MD94/B	MD94/B	Elsa Prospect, Peak Hill Mn Province, Yilgarn craton	hollandite-pyrolusite	K-Ar	32.7	0.4	-	32.5± 0.4 (original age before correction)		125˚ 18' E	19˚ 11' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH209	ABH209	Horseshoe, Peak Hill Mn Province, Yilgarn craton	oxides	K-Ar	10	38	-	297.5± 10.4 (original age before correction)		118˚ 34' E	25˚ 27' S		A.R.1999.
ABH210	ABH210	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	K-Ar	30.9	0.6	-	36.1± 0.4 (original age before correction)		118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH211	ABH211	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane	K-Ar	31.3	3.9	-	68.1± 0.7 (original age before correction)		118˚ 34' E	25˚ 27' S		A.R.1999.
ABH212	ABH212	Horseshoe, Peak Hill Mn Province, Yilgarn craton	oxides	K-Ar	-5	32	-	249.1± 3.4 (original age before correction)		118˚ 34' E	25˚ 27' S		A.R.1999.
ABH214	ABH214	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	K-Ar	30.5	0.3	-	30.6± 0.3 (original age before correction)		118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH215	ABH215	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	K-Ar	36.2	0.4	-	36.3± 0.4 (original age before correction)		118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH216	ABH216	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	K-Ar	34.9	0.4	-	35.1± 0.4 (original age before correction)		118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH217	ABH217	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	K-Ar	37.1	0.4	-	37.4± 0.4 (original age before correction)		118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH218	ABH218	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-manjiroite	K-Ar	52	0.9	-	56.7± 0.8 (original age before correction)		118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
MDC3947	MDC3947	Mt Gordon, SE Yilgarn	oxides	K-Ar	5.6	0.4	-	9.5± 0.1 (original age before correction)					A.R.1999.
MDC3938	MDC3938	Kalgoorlie, SE Yilgarn	oxides	K-Ar	24.5	2	-	44.3± 0.5 (original age before correction)		121˚ 28' E	30˚ 45' S		A.R.1999.
MDC3146	MDC3146	Port Headland, NW Pilbara	oxides	K-Ar	15.3	0.2	-	16.1± 0.2 (original age before correction)		121˚ 20' E	20˚ 18' S		A.R.1999.
S4087	S4087	Halls Creek, S Kimberley	oxides	K-Ar	34.4	0.5	-	36.0± 0.4 (original age before correction)		127˚ 40' E	18˚ 14' S		A.R.1999.
MDC4174	MDC4174	Goddiadarie Hills, central Hamersley	oxides	K-Ar	15	4.3	-	56.3± 0.6 (original age before correction)		117˚ 9' E	20˚ 46' S		A.R.1999.
MDC3484	MDC3484	Roeburne, NW Pilbara	oxides	K-Ar	17.7	0.2	-	17.9± 0.2 (original age before correction)		119˚ 34' E	23˚ 16' S		A.R.1999.
MDC1100	MDC1100	Mt.Newmam, SE Hamersley	oxides	K-Ar	8.6	0.2	-	8.9± 0.1 (original age before correction)		121˚ 5' E	28˚ 5' S		A.R.1999.
S4067	S4067	Hamersley River, S Yilgarn	oxides	K-Ar	5.5	0.3	-	8.6± 0.2 (original age before correction)		119˚ 35' E	33˚ 45' S		A.R.1999.
S4068	S4068	Wallangie, central Yilgarn	oxides	K-Ar	36.4	0.5	-	37.1± 0.5 (original age before correction)					A.R.1999.
S4069	S4069	Phillips River, S Yilgarn	oxides	K-Ar	8.1	1.4	-	22.0± 0.2 (original age before correction)		119˚ 56' E	33˚ 42' S		A.R.1999.
S4073	S4073	Mt. Desmond	oxides	K-Ar	12.7	0.1	-	13.0± 0.1 (original age before correction)		120˚ 8' E	33˚ 38' S		A.R.1999.
S4076	S4076	Mundijong, Perth Coast	oxides	K-Ar	1.4	1.4	-	15.1± 0.2 (original age before correction)		115˚ 59' E	32˚ 18' S		A.R.1999.
S4092	S4092	Hamersley River	oxides	K-Ar	23.9	1.1	-	34.0± 0.4 (original age before correction)		119˚ 35' E	33˚ 45' S		A.R.1999.
S4104	S4104	Sudden Jerk, SE Yilgarn	oxides	K-Ar	29.6	7.6	-	103.2±1.1 (original age before correction)					A.R.1999.
S4110	S4110	Broadarrow, SE Yilgarn	oxides	K-Ar	19.9	0.3	-	20.1± 0.3 (original age before correction)		121˚ 20' E	30˚ 27' S		A.R.1999.
MDC3188	MDC3188	Halls Creek, S Kimberley	oxides	K-Ar	47.5	0.7	-	47.5± 0.7 (original age before correction)		127˚ 40' E	18˚ 14' S		A.R.1999.
ABH174	ABH174 (1)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	28.6	0.5	-	J=1.3108•10^{-3}		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (1)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	28.2	0.3	-	J=1.3108•10^{-3}		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (1)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	27.8	0.3	-	J=1.3108•10^{-3}		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (2)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	30	0.2	-	J=1.3108•10^{-3}		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (2)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	29.5	0.2	-	J=1.3108•10^{-3}		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (2)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	29.3	0.4	-	J=1.3108•10^{-3}		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (3)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	28.5	0.2	-	J=1.3087•10^{-3}		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (3)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	28.5	0.2	-	J=1.3087•10^{-3}		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (3)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	28.3	0.2	-	J=1.3087•10^{-3}		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (4)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	28.3	0.2	-	J=1.2988•10^{-3}		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (4)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	28.1	0.2	-	J=1.2988•10^{-3}		121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (4)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	27.9	0.1	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (5)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	29.4	0.2	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (5)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	29.3	0.1	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (5)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	29	0.2	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (5)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	29	0.1	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (6)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	28.1	0.1	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (6)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	27.8	0.1	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (6)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	27.7	0.2	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (7)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	28.7	0.6	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (7)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	27.4	2.4	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (7)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	26.4	0.2	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (7)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	26	2	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (7)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	25.2	0.5	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (7)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	24.9	0.2	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH174	ABH174 (7)	Woodie Woodie, Pilbara	oxides	$^{40}Ar/^{39}Ar$ (TF)	24.6	0.2	-			121˚ 13' 51.69" E	21˚ 38' 07.72" S		A.R.1999.
ABH210	ABH210(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	39.1	0.4	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH210	ABH210(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	38.5	0.9	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH210	ABH210(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	38.2	0.3	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH210	ABH210(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	37.6	0.8	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH210	ABH210(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	32.7	0.9	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH210	ABH210(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	37.9	0.4	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH210	ABH210(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	35	0.2	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH210	ABH210(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	34.9	0.2	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH210	ABH210(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	34.5	0.2	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH210	ABH210(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	34.2	0.9	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH210	ABH210(3)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	32.3	0.2	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.
ABH210	ABH210(3)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	31.3	0.2	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.

ABH210	ABH210(3)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	30.6	0.2	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH210	ABH210(3)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	30.3	0.2	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH210	ABH210(3)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	30	0.2	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH211	ABH211(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	42.6	0.5	-			118˚ 34' E	25˚ 27' S		A.R.1999.	
ABH211	ABH211(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	41.7	0.9	-			118˚ 34' E	25˚ 27' S		A.R.1999.	
ABH211	ABH211(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	41.4	0.6	-			118˚ 34' E	25˚ 27' S		A.R.1999.	
ABH211	ABH211(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	40.6	0.4	-			118˚ 34' E	25˚ 27' S		A.R.1999.	
ABH211	ABH211(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	40.1	0.5	-			118˚ 34' E	25˚ 27' S		A.R.1999.	
ABH211	ABH211(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	40.4	0.3	-			118˚ 34' E	25˚ 27' S		A.R.1999.	
ABH211	ABH211(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	38.9	0.4	-			118˚ 34' E	25˚ 27' S		A.R.1999.	
ABH211	ABH211(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	37.2	0.3	-			118˚ 34' E	25˚ 27' S		A.R.1999.	
ABH211	ABH211(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane	$^{40}Ar/^{39}Ar$ (TF)	35.7	0.5	-			118˚ 34' E	25˚ 27' S		A.R.1999.	
ABH215	ABH215(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	41.8	0.3	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH215	ABH215(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	39.5	0.7	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH215	ABH215(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	36.7	0.7	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH215	ABH215(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	35.4	0.3	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH215	ABH215(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	34.5	0.2	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH215	ABH215(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	33.7	0.3	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH215	ABH215(3)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	29.7	0.2	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH215	ABH215(3)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	29.6	0.2	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH215	ABH215(3)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	29.3	0.2	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH216	ABH216(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	45.1	0.4	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH216	ABH216(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	43.9	0.2	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH216	ABH216(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	43.7	0.3	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH216	ABH216(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	43.5	0.4	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH216	ABH216(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	43.4	0.3	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH216	ABH216(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	43	0.3	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH216	ABH216(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	43.5	0.6	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH216	ABH216(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	42.7	0.6	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH216	ABH216(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	41.8	0.4	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH216	ABH216(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	41.2	0.4	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH217	ABH217(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	39.7	0.3	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH217	ABH217(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	39.4	0.3	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH217	ABH217(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	36.6	0.7	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH217	ABH217(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	39.4	0.4	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH217	ABH217(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	39.2	0.9	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH217	ABH217(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	39.1	0.6	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH217	ABH217(3)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	40.6	0.3	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH217	ABH217(3)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	40.5	0.4	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH217	ABH217(3)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	39.5	0.3	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH217	ABH217(3)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-hollandite	$^{40}Ar/^{39}Ar$ (TF)	39.1	0.3	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH218	ABH218(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-manjiroite	$^{40}Ar/^{39}Ar$ (TF)	51.4	3.6	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH218	ABH218(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-manjiroite	$^{40}Ar/^{39}Ar$ (TF)	50	17	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH218	ABH218(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-manjiroite	$^{40}Ar/^{39}Ar$ (TF)	48.2	2.1	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH218	ABH218(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-manjiroite	$^{40}Ar/^{39}Ar$ (TF)	43.2	2.7	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH218	ABH218(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-manjiroite	$^{40}Ar/^{39}Ar$ (TF)	43.2	2.1	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH218	ABH218(1)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-manjiroite	$^{40}Ar/^{39}Ar$ (TF)	42.3	3.9	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH218	ABH218(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-manjiroite	$^{40}Ar/^{39}Ar$ (TF)	7.4	0.1	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
ABH218	ABH218(2)	Horseshoe, Peak Hill Mn Province, Yilgarn craton	cryptomelane-manjiroite	$^{40}Ar/^{39}Ar$ (TF)	7.5	1.1	-			118˚ 34' E	25˚ 27' S		DAMMER, D; McDOUGALL, I & CHIVAS, A.R.1999.	
Tabor99-01	Run 1385-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	18.7	0.6	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-01	Run 1385-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	18.4	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-01	Run 1385-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	18	3	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-03rims	Run 1386-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	15.5	0.5	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-03rims	Run 1386-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	35	5	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-03matrix	Run 1387-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	15	1.5	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-03matrix	Run 1387-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	15	1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-04	Run 1390-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	18.2	1.4	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-04	Run 1390-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	15.7	0.7	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-04	Run 1390-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	19.4	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-05	Run 1391-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	17.6	1.1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	

Tabor99-05	Run 1391-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	20.8	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-05	Run 1391-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	19	1.1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-06matrix	Run 1392-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	16.5	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-07	Run 1393-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	20.5	0.8	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-07	Run 1393-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	20.3	1.1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-07	Run 1393-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	19.3	0.6	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-08center	Run 1396-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	13.6	1.3	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-08center	Run 1396-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	14.5	0.8	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-09	Run 1399-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	12.2	0.7	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-09	Run 1399-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	8	1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-09	Run 1399-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	14	2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-09innerband	Run 1400-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	12.7	1.3	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-09innerband	Run 1400-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	9.1	1.3	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-09innerband	Run 1400-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	13.8	1.6	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-09outerband	Run 1401-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	21	1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-09outerband	Run 1401-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	27.2	0.8	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-09outerband	Run 1401-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	32	6	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-10topband	Run 1406-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	23.9	1.7	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-10topband	Run 1406-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	20	0.9	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-10topband	Run 1406-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	18.6	0.5	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-10matrix	Run 1407-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	18.5	0.7	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-10matrix	Run 1407-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	20.5	0.9	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-10matrix	Run 1407-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	17.3	1.4	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
abor99-10bottomban	Run 1408-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	17.6	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
abor99-10bottomban	Run 1408-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	22.7	1.8	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-12	Run 1412-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	16.1	1.3	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-14pure	Run 1413-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	17.1	0.3	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-14pure	Run 1413-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	15.2	0.9	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-14pure	Run 1413-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	15	1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-14matrix	Run 1414-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	23.1	1.1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-14matrix	Run 1414-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	21.8	1.4	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-14matrix	Run 1414-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	23.3	0.4	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-15	Run 1416-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	20.3	0.4	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-16	Run 1417-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	15.7	0.5	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-16	Run 1417-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	20.4	1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-17	Run 1418-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	15.1	0.8	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-17	Run 1418-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	13.9	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-17	Run 1418-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	17.6	0.5	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-18slab	Run 1419-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	13	2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-18slab	Run 1419-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	16.7	1.3	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-18surface	Run 1425-04	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	10.1	0.7	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-19matrix	Run 1421-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	9.7	0.5	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-19matrix	Run 1421-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	15.7	1.1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-19	Run 1422-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	17.5	1.1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-21	Run 1423-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	16	2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-21	Run 1423-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	20.7	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-21	Run 1423-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	19	1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-21	Run 1423-04	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	10.1	0.7	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
abor99-22bottomban	Run 1429-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	7.2	0.4	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
abor99-22bottomban	Run 1429-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	38	6	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-23matrix	Run 1431-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	17	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-23matrix	Run 1431-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	55	17	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-23nodules	Run 1432-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	18.8	1.3	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-23nodules	Run 1432-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	18.8	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-24matrix	Run 1433-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	21.7	1.1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-24matrix	Run 1433-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	21.1	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-24nodule	Run 1434-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	26.4	0.9	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	

Tabor99-24nodule	Run 1434-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	20.3	1.1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-24nodule	Run 1434-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	15.3	0.9	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-25otherband	Run 1435-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	31	7	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-25botryoidal	Run 1437-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	21.2	0.5	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-25botryoidal	Run 1437-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	18	1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-25botryoidal	Run 1437-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	22.6	1.1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-25botryoidal	Run 1437-04	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	25	4	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-26	Run 1438-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	18.2	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-26	Run 1438-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	18	1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-28outerband	Run 1440-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	14.9	1.3	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-28outerband	Run 1440-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	17.7	1.4	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-28outerband	Run 1440-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	20.5	0.7	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-28Gen2~4	Run 1441-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	21.5	1.3	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-28Gen2~4	Run 1441-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	19.8	1.6	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-28Gen2~4	Run 1441-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	21.6	1.4	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-28Gen5~8	Run 1442-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	16.3	1.7	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-28Gen5~8	Run 1442-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	25.5	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-28Gen5~8	Run 1442-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	22	3	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-29matrix	Run 1443-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	20	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-29outerband	Run 1444-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	28	4	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-29outerband	Run 1444-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	26.7	1.8	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-29top4band	Run 1445-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	15	1	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-29top4band	Run 1445-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	16.7	0.4	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-29top4band	Run 1445-03	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	19.2	1.2	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-28 innerband	Run 1446-01	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	26	3	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
Tabor99-28 innerband	Run 1446-02	Mt Tabor, central Queensland	hollandite-cryptomelane	$^{40}Ar/^{39}Ar$	24.7	0.7	-	Plateau Age		147˚ 34' E	25˚ 12' S		LI, Jian-Wei & VASCONCELOS, P. 2002.	
DR-98-28	Run 0546-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	15.76	-	0.04	Plateau Age/ Recoil	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003. Geochronology of Weathering and Landscape Evolution, Dugald River Valley, Nw Queensland, Australia. *Geochimica et Cosmochimica Acta*, **Vol. 67**, n˚ 16, pp. 2913-2930.	
DR-98-28	Run 0546-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	15.33	-	0.03	Plateau Age/ Recoil	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-29	Run 0558-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	14.50	-	0.60	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-30	Run 0556-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	13.27	-	0.06	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-31	Run 0566-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	16.09	-	0.05	Plateau Age/ Contamination	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-33	Run 0534-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	16.80	-	0.07	Plateau Age/ Small recoil	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-33	Run 0534-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	15.56	-	0.06	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-33vein	Run 0534-10	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	15.70	-	0.40	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-33	Run 0535-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	15.56	-	0.12	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-33	Run 0535-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	14.82	-	0.15	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-33vein	Run 0532-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	16.31	-	0.08	Plateau Age/ Small recoil and Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-33vein	Run 0532-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	15.60	-	0.20	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-85	Run 0551-01	Dugald River Deposit, NW Queensland	hollandite	$^{40}Ar/^{39}Ar$	12.31	-	0.04	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-85	Run 0551-02	Dugald River Deposit, NW Queensland	hollandite	$^{40}Ar/^{39}Ar$	12.54	-	0.13	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-85	Run 0552-01	Dugald River Deposit, NW Queensland	hollandite	$^{40}Ar/^{39}Ar$	12.46	-	0.06	Plateau Age/ Drop end	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-85	Run 0552-02	Dugald River Deposit, NW Queensland	hollandite	$^{40}Ar/^{39}Ar$	12.84	-	0.05	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-34	Run 0545-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	17.30	-	0.70	Plateau Age/ Large error	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-34	Run 0545-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	15.45	-	0.05	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-35a	Run 0540-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	15.25	-	0.14	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-35a	Run 0540-03	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	16.10	-	0.20	Plateau Age/ Minor climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-39	Run 0541-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	15.53	-	0.12	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-39	Run 0541-03	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	15.30	-	0.20	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-41	Run 0606-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	14.67	-	0.14	Plateau Age/ Contamination	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-42-01	Run 0593-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	5.18	-	0.05	Plateau Age/ Contamination	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-42-01	Run 0593-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	5.18	-	0.04	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-42-02	Run 0570-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.80	-	0.03	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-42-02	Run 0570-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.87	-	0.11	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-42-03	Run 0563-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.65	-	0.03	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-42-03	Run 0563-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.51	-	0.05	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚ 15'S)	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	

DR-98-42B-01	Run 0568-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	5.39	-	0.05	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-42B-01	Run 0568-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	5.58	-	0.07	Plateau Age/ Small contamination	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-42B-02	Run 0548-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	2.40	-	0.30	Plateau Age/ Large error	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-42B-02	Run 0548-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	2.10	-	0.20	Plateau Age/ Contamination	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-42C-02	Run 0567-01	Dugald River Deposit, NW Queensland	cryptomelane/ hollandite	$^{40}Ar/^{39}Ar$	4.55	-	0.11	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-42C-02	Run 0567-02	Dugald River Deposit, NW Queensland	cryptomelane/ hollandite	$^{40}Ar/^{39}Ar$	4.91	-	0.06	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-43-01	Run 0562-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	5.29	-	0.17	Plateau Age/ Climbing and contamination	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-43-01	Run 0562-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.20	-	0.10	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-43-03	Run 0557-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.72	-	0.15	Plateau Age/ Climbing and contamination	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-43-03	Run 0557-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	5.21	-	0.05	Plateau Age/ Climbing and contamination	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-43-03	Run 0557-03	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	6.08	-	0.14	Plateau Age/ Climbing and contamination	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-43-03	Run 0557-10	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	7.20	-	0.08	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-43-03	Run 0557-11	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	5.67	-	0.03	Plateau Age/ Climbing and Evolution	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-43-03	Run 0557-12	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.26	-	0.08	Plateau Age/ Climbing and Evolution	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-44-01	Run 0549-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.26	-	0.08	Plateau Age/ Large error	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-44-01	Run 0549-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.77	-	0.06	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-44-01	Run 0549-03	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.20	-	0.20	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-44-01	Run 0549-10	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.23	-	0.14	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-44-01	Run 0549-11	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.02	-	0.13	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-44-01	Run 0549-12	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.20	-	0.10	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-44-02	Run 0561-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	6.30	-	0.20	Plateau Age/ Contamination	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-44-02	Run 0561-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.42	-	0.15	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-44-03	Run 0569-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.58	-	0.02	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-44-03	Run 0569-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	4.37	-	0.03	Plateau Age/ Climbing	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-56	Run 0530-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	1.90	-	0.20	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-56	Run 0530-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	1.84	-	0.16	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-56	Run 0530-03	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	2.30	-	0.08	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-56	Run 0531-01	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	2.10	-	0.14	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-56	Run 0531-02	Dugald River Deposit, NW Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	2.39	-	0.14	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-47	Run 0627-01	Dugald River Deposit, NW Queensland	Brown Jarosite	$^{40}Ar/^{39}Ar$	1.15	-	0.14	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-47	Run 0627-02	Dugald River Deposit, NW Queensland	Brown Jarosite	$^{40}Ar/^{39}Ar$	0.98	-	0.08	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-47	Run 0628-02	Dugald River Deposit, NW Queensland	Yellow Jarosite	$^{40}Ar/^{39}Ar$	1.12	-	0.18	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-47	Run 0628-03	Dugald River Deposit, NW Queensland	Yellow Jarosite	$^{40}Ar/^{39}Ar$	2.20	-	0.50	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-50	Run 0614-01	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	0.77	-	0.18	Plateau Age/ Large error	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-50	Run 0614-02	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	1.20	-	0.20	Plateau Age/ Large error	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-50	Run 0614-03	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	0.90	-	0.30	Plateau Age/ Large error	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-51	Run 0630-01	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	0.92	-	0.03	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-51	Run 0630-02	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	0.96	-	0.02	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-51	Run 0630-03	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	0.89	-	0.06	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-51	Run 0631-01	Dugald River Deposit, NW Queensland	Alunite	$^{40}Ar/^{39}Ar$	1.30	-	0.02	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-51	Run 0631-02	Dugald River Deposit, NW Queensland	Alunite	$^{40}Ar/^{39}Ar$	1.33	-	0.03	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-51	Run 0631-03	Dugald River Deposit, NW Queensland	Alunite	$^{40}Ar/^{39}Ar$	1.24	-	0.03	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-52	Run 0621-01	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	0.99	-	0.03	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-52	Run 0621-02	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	0.96	-	0.02	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-53	Run 0629-01	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	1.32	-	0.07	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-53	Run 0629-02	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	1.05	-	0.09	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-53	Run 0629-03	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	0.97	-	0.05	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-54	Run 0626-01	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	1.03	-	0.04	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-54	Run 0626-02	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	1.00	-	0.07	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-55	Run 0622-01	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	1.57	-	0.02	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-55	Run 0622-02	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	1.68	-	0.02	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-57	Run 0618-01	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	1.20	-	0.02	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-57	Run 0618-02	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	1.21	-	0.05	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-58	Run 0615-01	Dugald River Deposit, NW Queensland	Crystalline Jarosite	$^{40}Ar/^{39}Ar$	0.94	-	0.04	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-58	Run 0615-02	Dugald River Deposit, NW Queensland	Crystalline Jarosite	$^{40}Ar/^{39}Ar$	0.74	-	0.02	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-58	Run 0616-01	Dugald River Deposit, NW Queensland	Massive Jarosite	$^{40}Ar/^{39}Ar$	0.86	-	0.04	Plateau Age/ Small contamination	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-58	Run 0616-02	Dugald River Deposit, NW Queensland	Massive Jarosite	$^{40}Ar/^{39}Ar$	0.84	-	0.06	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	

DR-98-63	Run 0624-01	Dugald River Deposit, NW Queensland	Alunite	$^{40}Ar/^{39}Ar$	2.11	-	0.04	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-63	Run 0624-02	Dugald River Deposit, NW Queensland	Alunite	$^{40}Ar/^{39}Ar$	2.08	-	0.05	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-63	Run 0625-01	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	1.20	-	0.20	Plateau Age/ Large error	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-63	Run 0625-02	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	3.40	-	0.80	Plateau Age/ Large error	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-63	Run 0625-03	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	2.40	-	0.50	Plateau Age/ Large error	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-65	Run 0632-01	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	0.90	-	0.40	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-65	Run 0632-03	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	1.13	-	0.15	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-72	Run 0589-01	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	1.00	-	0.09	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-72	Run 0589-02	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	0.99	-	0.09	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-72	Run 0589-03	Dugald River Deposit, NW Queensland	Jarosite	$^{40}Ar/^{39}Ar$	0.85	-	0.09	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-75	Run 0588-02	Dugald River Deposit, NW Queensland	Alunite	$^{40}Ar/^{39}Ar$	0.80	-	0.04	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-75	Run 0588-03	Dugald River Deposit, NW Queensland	Alunite	$^{40}Ar/^{39}Ar$	0.95	-	0.05	Plateau Age/ Minor contamination	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-87	Run 0619-01	Dugald River Deposit, NW Queensland	Alunite	$^{40}Ar/^{39}Ar$	1.50	-	0.05	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-87	Run 0619-02	Dugald River Deposit, NW Queensland	Alunite	$^{40}Ar/^{39}Ar$	1.26	-	0.07	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-89	Run 0586-01	Dugald River Deposit, NW Queensland	Alunite	$^{40}Ar/^{39}Ar$	1.53	-	0.05	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-89	Run 0586-02	Dugald River Deposit, NW Queensland	Alunite	$^{40}Ar/^{39}Ar$	1.48	-	0.04	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
DR-98-89	Run 0586-03	Dugald River Deposit, NW Queensland	Alunite	$^{40}Ar/^{39}Ar$	1.56	-	0.03	Plateau Age	90Km NE of Mount Isa (140˚ 10'E, 20˚	140˚ 10' E	20˚ 15' S		VASCONCELOS, P. & CONROY, M. 2003.	
KA-8-1B	Run 0782-01	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.291	-	0.014	Plateau Age	FENG, Y. & VASCONCELOS, P. 2001. Quaternary Continental Weathering Geochronology by Laser-Heating 40Ar/39Ar A					Cryptomelane, two generation intergrowth, with miner Quartz and trace goethite
KA-8-1B	Run 0782-02	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.373	-	0.016	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane, two generation intergrowth, with miner Quartz and trace goethite
KA-8-1B	Run 0782-03	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.313	-	0.015	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane, two generation intergrowth, with miner Quartz and trace goethite
KA-8-1B	Run 0782-04	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.32	-	0.013	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane, two generation intergrowth, with miner Quartz and trace goethite
KA-8-1B	Run 0782-05	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.33	-	0.03	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane, two generation intergrowth, with miner Quartz and trace goethite
KA-8-1B	Run 0782-06	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.33	-	0.03	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane, two generation intergrowth, with miner Quartz and trace goethite
KA-8-3	Run 0784-01	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.29	-	0.02	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane, with tiny veins and trace quartz
KA-8-3	Run 0784-02	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.346	-	0.015	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane, with tiny veins and trace quartz
KA-8-3	Run 0784-03	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	-	-	-	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane, with tiny veins and trace quartz
KA-8-3	Run 0784-04	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.3	-	0.02	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane, with tiny veins and trace quartz
KA-8-3	Run 0784-05	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.29	-	0.03	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane, with tiny veins and trace quartz
KA-8-3	Run 0784-06	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.32	-	0.05	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane, with tiny veins and trace quartz
KA-8-3	Run 0784-07	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.26	-	0.04	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane, with tiny veins and trace quartz
KE-8-2A	Run 0795-01	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.3	-	0.1	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane with tiny vein of a later generation, trace quartz
KE-8-2A	Run 0795-02	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.37	-	0.08	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	Cryptomelane with tiny vein of a later generation, trace quartz
IM-10-5A	Run 0822-01	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.3	-	0.04	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	
IM-10-5A	Run 0822-02	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.37	-	0.03	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	
IM-10-5A	Run 0822-03	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.34	-	0.03	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	
IM-10-5A	Run 0822-01	Mary Valley, Gympie, Southeast Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.28	-	0.04	Plateau Age					FENG, Y. & VASCONCELOS, P. 2001.	
KA-6-2A	Run 0776-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.187	-	0.011	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	
KA-6-2A	Run 0776-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.235	-	0.019	Plateau-like Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with low quartz.
KA-6-2A	Run 0776-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.270	-	0.020	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with low quartz.
KA-6-2A	Run 0776-04	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.220	-	0.030	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with low quartz.
KA-6-2A	Run 0776-05	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.262	-	0.017	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with low quartz.
KA-6-4A	Run 0777-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.310	-	0.040	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, possible with trace clay.
KA-6-4A	Run 0777-04	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.140	-	0.040	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, possible with trace clay.
KA-6-4A	Run 0777-05	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	-0.190	-	0.070	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, possible with trace clay.
KA-6-4B	Run 0778-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.280	-	0.030	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, possible with trace clay.
KA-6-4B	Run 0778-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.320	-	0.040	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with hollandite vein.
KA-6-4B	Run 0778-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.100	-	0.050	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with hollandite vein.
KA-6-4B	Run 0778-04	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.870	-	0.080	Plateau-like Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with hollandite vein.
KA-6-4B	Run 0778-05	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.300	-	0.050	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with hollandite vein.
KA-6-5	Run 0779-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.220	-	0.020	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with hollandite vein.
KA-6-5	Run 0779-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.230	-	0.040	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with trace quartz, hollan-dite vein, sam-pling from inner part to rim
KA-6-5	Run 0779-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.160	-	0.040	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with trace quartz, hollan-dite vein, sam-pling from inner part to rim
KA-6-5	Run 0779-04	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.500	-	0.090	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with trace quartz, hollan-dite vein, sam-pling from inner part to rim
KA-6-6	Run 0780-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.197	-	0.019	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with trace quartz, hollan-dite vein, sam-pling from inner part to rim
KA-6-6	Run 0780-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.310	-	0.020	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, two generation inter-growth
KA-6-6	Run 0780-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.280	-	0.020	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, two generation inter-growth
KA-6-6	Run 0780-04	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.230	-	0.020	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, two generation inter-growth
KA-7	Run 0785-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.310	-	0.030	Plateau-like Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, two generation inter-growth
KA-7	Run 0785-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.310	-	0.020	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, two generation intergrowth, with miner Quartz and trace goethite
KA-7	Run 0785-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.319	-	0.019	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, two generation intergrowth, with miner Quartz and trace goethite
KA-7	Run 0785-04	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.210	-	0.040	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, two generation intergrowth, with miner Quartz and trace goethite
KA-7	Run 0785-05	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.200	-	0.060	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, two generation intergrowth, with miner Quartz and trace goethite
KA-7	Run 0785-06	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.240	-	0.060	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, two generation intergrowth, with miner Quartz and trace goethite
KA-8-1B	Run 0782-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.291	-	0.014	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, two generation intergrowth, with miner Quartz and trace goethite
KA-8-1B	Run 0782-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.373	-	0.016	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with tiny veins and trace quartz
KA-8-1B	Run 0782-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.313	-	0.015	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with tiny veins and trace quartz
KA-8-1B	Run 0782-04	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.320	-	0.013	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with tiny veins and trace quartz
KA-8-1B	Run 0782-05	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.330	-	0.030	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with tiny veins and trace quartz
KA-8-1B	Run 0782-06	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.330	-	0.030	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with tiny veins and trace quartz
KA-8-3	Run 0784-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.290	-	0.020	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with tiny veins and trace quartz
KA-8-3	Run 0784-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.346	-	0.015	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with tiny vein of a later generation, trace quartz
KA-8-3	Run 0784-04	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.300	-	0.020	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with tiny vein of a later generation, trace quartz
KA-8-3	Run 0784-05	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.290	-	0.030	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with tiny vein of a later generation, trace quartz
KA-8-3	Run 0784-06	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.320	-	0.050	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with tiny vein of a later generation, trace quartz
KA-8-3	Run 0784-07	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.260	-	0.040	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with tiny vein of a later generation, trace quartz
KA-8-2A	Run 0783-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.380	-	0.050	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with tiny vein of a later generation, trace quartz
KA-8-2A	Run 0783-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.320	-	0.030	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with veins of hollandite; trace quartz or clay

KA-8-2A	Run 0783-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.300	-	0.030	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with veins of hollandite; trace quartz or clay
KA-8-2A	Run 0783-04	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.360	-	0.017	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with veins of hollandite; trace quartz or clay
KA-8-4	Run 0786-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.240	-	0.020	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with veins of hollandite; trace quartz or clay
KA-8-4	Run 0786-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.170	-	0.040	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane in vein, with tiny veins of hollandite.
KA-8-4	Run 0786-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.240	-	0.030	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane in vein, with tiny veins of hollandite.
KA-8-4	Run 0786-04	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.230	-	0.040	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane in vein, with tiny veins of hollandite.
KA-8	Run 0837-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.304	-	0.016	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane in vein, with tiny veins of hollandite.
KA-8	Run 0837-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.320	-	0.040	Plateau-like Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Mn-oxides containing low K (0.5-0.8%).
KA-9-1B	Run 0787-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.331	-	0.018	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Mn-oxides containing low K (0.5-0.8%).
KA-9-1B	Run 0787-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.340	-	0.050	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, possibly with clay containing 1.5% Ca in crack.
KA-9-1B	Run 0787-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.290	-	0.030	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, possibly with clay containing 1.5% Ca in crack.
KA-9-1B	Run 0787-04	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.300	-	0.070	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, possibly with clay containing 1.5% Ca in crack.
KA-9-1B	Run 0787-05	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.210	-	0.040	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, possibly with clay containing 1.5% Ca in crack.
KA-9-1C	Run 0838-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.310	-	0.040	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, possibly with clay containing 1.5% Ca in crack.
KA-9-1C	Run 0838-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.330	-	0.040	Plateau-like Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with trace quartz
KA-9-1C	Run 0838-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.400	-	0.040	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with trace quartz
KA-9-1C	Run 0838-04	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.330	-	0.090	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with trace quartz
KA-10-1A	Run 0788-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.220	-	0.015	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, with trace quartz
KA-10-1A	Run 0788-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.200	-	0.015	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane and hollandite with trace quartz, and tiny vein of hollandite.
KA-10-1A	Run 0788-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.200	-	0.020	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane and hollandite with trace quartz, and tiny vein of hollandite.
KA-10-1A	Run 0788-04	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.300	-	0.030	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane and hollandite with trace quartz, and tiny vein of hollandite.
KA-10-2B	Run 0856-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.250	-	0.040	Plateau-like Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with trace quartz.
KA-10-2B	Run 0856-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.200	-	0.080	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with trace quartz.
KA-10-5A	Run 0858-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.220	-	0.030	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with trace quartz.
KA-10-5A	Run 0858-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.300	-	0.020	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Two generations of cryptomelane inter-growth, with low quartz in crack.
KA-12-3A(2)	Run 0833-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.630	-	0.030	Plateau-like Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Two generations of cryptomelane inter-growth, with low quartz in crack.
KA-12-3A(2)	Run 0833-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.400	-	0.030	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with micro-banding structure.
KA-12-3A(2)	Run 0833-03	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.650	-	0.090	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with micro-banding structure.
KA-12-5C	Run 0836-01	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.310	-	0.040	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane with micro-banding structure.
KA-12-5C	Run 0836-02	Upper Kandanga Mn deposit, Mary Valley, Gympie, SE Queensland	cryptomelane	$^{40}Ar/^{39}Ar$	0.280	-	0.080	Plateau Age		152˚ 40' E	26˚ 13' S		FENG, Y. & VASCONCELOS, P. 2007.	Cryptomelane, intergrowth with pyrolusite.