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18. Kurzfassung

Das Ziel der SO144/3-Gesteinsbeprobungsfahrt war das bessere Verständnis der zeitlich-räumlichen Verteilung sowie geochemischen Variabilität des Galápagos Hotspot Systems (GHS), ein Gebiet mit ausgedehntem Intraplattenvulkanismus, das sich vor der Küste Zentralamerikas befindet. Wir berichten hier von 83 kürzlich bestimmten Hochpräzisions-$^{40}Ar/^{39}Ar$-Alterdaten für die SO144/3-Proben. Diese zahlreichen Hochpräzisions-Alterdaten für gezielt gedredgte GHS-Gesteinsproben – zusammen mit geochemischen, magnetischen und seismischen Profilinformationen – sind zur Rekonstruktion der Entwicklung der großflächigen GHS-Strukturen unentbehrlich. Diese Schlüsselaltersdaten werden es uns in Zusammenarbeit mit unseren Projektpartnern erlauben, die physikalische und geochemische Interaktion zwischen dem Galápagosplume und lokalen Spreizungsgrenzen zu kartieren, die absoluten Bewegungen der Nazca- und Cocos-Tektonikplatten zu rekonstruieren, sowie das langfristige Verhalten des Galápagosmantelplumes abzuleiten. Als wichtigste erste Ergebnisse sind zu nennen:

1. Das Alter des GHS erstreckt sich von weniger als 1 Ma bis über 16 Ma.
2. Altersprogressive Trends lassen sich schwach in der Vulkanismusverteilung entlang der Cocos- und Carnegie-Hotspotketten erkennen.
3. Mehrere, sich überlappende weiträumige magmatische Ereignisse trugen zur Bildung des Großteils des GHS bei.
4. Diese weiträumige Überflutung der zugrundeliegenden altersprogressiven Trends entlang der Cocos- und Carnegierücken lässt sich nicht mit Standard-Plume-Hotspot-Theorien erklären.
5. Die Fülle und Qualität der hier berichteten Altersdaten sollte, zusammen mit geochemischen und geophysikalischen Daten anderer SO144-Projekte, wichtige neue Einblicke in die grundlegende Mantelplumetheorie geben.

19. Schlagwörter
Galápagosinseln, Plumes, Hotspots, Plume-Rückeninteraktion; $^{40}Ar/^{39}Ar$; Geochronologie, Ostpazifik

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18. Abstract

The objective of the SO144/3 rock sampling cruise was a better understanding of the temporal-spatial distribution and geochemical variability of the Galápagos Hotspot System (GHS), a region of widespread midplate volcanism located offshore Central America. We report here 83 recently-determined high precision $^{40}Ar/^{39}Ar$ ages for the SO144/3 samples. These numerous, high precision ages for strategically dredged GHS rock samples – together with geochemical, magnetic and seismic profile information – are essential for reconstructing the development of the widely dispersed GHS structures. Our key new age information will allow us, in collaboration with our project partners, to map the physical and geochemical interaction between the Galápagos plume and local spreading boundaries, reconstruct the absolute motion of the Nazca and Cocos tectonic plates, and infer the long-term behavior of the Galapagos mantle plume. The most notable initial results are:

1. The GHS ranges in age from less than 1 Ma to older than 16 Ma.
2. Age progressive trends can be detected faintly in the distribution of volcanism along the Cocos and Carnegie hotspot trails.
3. Multiple, overlapping widescale magmatic events contributed to the creation of the bulk of the GHS.
4. This wide-scale swamping of underlying age-progressive trends along the Cocos and Carnegie ridges cannot be explained by standard plume-hotspot theory.
5. The extent and quality of the age data reported here should, in combination with geochemical and geophysical data from other SO144 projects, provide important new insights into fundamental mantle plume theory.

19.Keywords

Galápagos Islands, Plumes, Hotspots, Plume-Ridge Interaction, $^{40}Ar/^{39}Ar$, Geochronology, East Pacific

20. Publisher University of Kiel	21. Price

Erfolgskontrollbericht

1. Beitrag der Ergebnisse zu den förderpolitischen Zielen des Förderprogramms

Das Vorhaben ist eingebettet in das Programm Meeresforschung und Meerestechnik der Bundesregierung und berührt die unter 4.1.1 Geowissenschaftliche Grundlagenforschung genannten Aufgaben mit dem besonderen Schwerpunkt der Prozesse an Kontinentalrändern.

2. Wissenschaftlicher und technischer Erfolg des Vorhabens

Die wissenschaftlichen Erfolge des Projekts bestehen aus der Überwindung erheblicher Probleme bei der Beprobung (siehe Fahrtbericht) und Analytik sowie insbesondere der erstmaligen Lieferung qualitativ hochwertiger Alterskontrolle, die eine Schlüsselrolle spielt bei der Beantwortung vieler noch offenstehenden Fragen bezüglich der Entwicklung des Galápagos Hotspot Systems. Dies wird in Kürze zu mindestens einer Publikation in einer einflussreichen internationalen Zeitschrift führen.

3. Finanzierungs- und Zeitplan

Der im Antrag vorgestellte Finanzierungs- und Zeitplan wurde eingehalten.

4. Verwendbarkeit der Ergebnisse und die Verwertungsmöglichkeiten

Die gewonnenen Ergebnisse stellen die Grundlage für eine Reihe von weiterführenden Programmen dar, mit deren Realisierung teilweise bereits begonnen wurde. Dabei handelt es sich vornehmlich um rein wissenschaftliche Zielsetzungen, die jedoch auch von unmittelbarer Bedeutung für die Abschätzung mineralischer Rohstoffe (z.B. Sulfidlagerstätten), für Fragen des Umweltschutzes und für Risikoanalysen (Erdbeben, Vulkanismus, Klimaänderung) der betroffenen Regionen sind.

5. Erfindungen und Schutzrechtanmeldungen

Diese wurden nicht geltend gemacht.

6. Arbeiten, die zu keiner Lösung geführt haben

Keine.

PAGANINI

PAnama Basin and **GA**lápagos "Plume" -
New **IN**vestigations of **I**ntraplate Magmatism

SO144

Abschlußbericht 2002

- 03G144B -

Berichtszeitraum: 1. Juli 1999 bis 31. Dezember 2001

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Schlußbericht

1. Aufgabenstellung

The ultimate objective of the SO144/3 rock sampling cruise was a better understanding of the temporal-spatial distribution and geochemical variability of the Galápagos Hotspot System (GHS), a region of widespread midplate volcanism located offshore Central America. We report here 83 recently-determined high precision $^{40}Ar/^{39}Ar$ ages for the SO144/3 samples. These numerous, high precision ages for strategically dredged GHS rock samples – together with geochemical, magnetic and seismic profile information – are essential for reconstructing the development of the widely dispersed GHS structures.

Our key new age information will allow us, in collaboration with our project partners, to map the physical and geochemical interaction between the Galápagos plume and local spreading boundaries, reconstruct the absolute motion of the Nazca and Cocos tectonic plates, and infer the long-term behavior of the Galapagos mantle plume.

2. Voraussetzungen

Sufficient rock samples were recovered from the GHS during the SO144/3 cruise.

3. Planung und Ablauf

The major objective of the SO 144-3 cruise was the systematic sampling of volcanic rocks in the area between the Galápagos Islands and Central–South America. This work focused on the aseismic Cocos, Carnegie, Coiba and Malpelo Ridges, together with associated seamounts. These ridges are generally considered to mark the trail of the Galápagos hotspot. Most rock sampling took place on profiles that extended both along and across the ridge axes and seamount chains, and both a dredge and TV-grab were used. Altogether 96 dredge tracks and 15 TV-grabs were completed without any loss of equipment. A total of 1225 rock samples from 87 stations were recovered, consisting of lava (e.g., basalt, trachybasalt), subvolcanic and plutonic rocks (e.g., gabbro, peridotite), volcaniclastic rocks (e.g., hyaloclastite, scoria, pumice) and sedimentary rocks (e.g., clay-, silt- and limestone, conglomerate, turbidite).

Petrographically, a general progression was observed at Carnegie Ridge from olivine-bearing lavas on the southern margin to feldspar-bearing lavas along the northern margin, and across Cocos Ridge from olivine- and pyroxene-bearing lavas along the NW margin to plagioclase-bearing lavas along the SE margin. Also, gabbro frequently occurs in a 100 km-wide band along the SE margin of Cocos Ridge. Feldspar-bearing rocks are prevalent along the NW margin of Malpelo Ridge, whereas a broad spectrum of basaltic lavas were dredged from Coiba Ridge. Samples varied from fresh to severely weathered at most stations.

Sample selection, preparation and irradiation for $^{40}Ar/^{39}Ar$ analysis has been described in detail in the Zwischenbericht. We have since measured in person high precision ages for 83 rock samples at the Vrije University, Amsterdam recovered during the SO144/3 cruise from Cocos, Carnegie, Malpelo, Coiba, and Fisher ridges and Cocos Island (Anlagen 1-4). Although we often encountered significantly greater challenges than anticipated in dating many of these samples - due to consistently low potassium contents and ages - we are confident that the quality of our results will lead to an important breakthrough in resolving the many questions about the development of the GHS.

4. Wissenschaftlich-technischer Stand

The current state of scientific-technical knowledge is described in detail in the SO144 cruise proposals.

5. Wissenschaftlich-technische Ergebnisse

5.1 **Anlage 1**, Sample Information

5.2 **Anlage 2**, Argon Isotopic Data

5.3 **Anlage 3**, Plateau, isochron, and inverse isochron plots

5.4 **Anlage 4**, Ages Calculated from Argon Isotopic Data

5.5 Initial Results:

1. The GHS ranges in age from less than 1 Ma to older than 16 Ma.

2. Age progressive trends can be detected faintly in the distribution of volcanism along the Cocos and Carnegie hotspot trails.

3. Multiple, overlapping wide-scale magmatic events contributed to the creation of the bulk of the GHS.

4. This wide-scale swamping of underlying age-progressive trends along the Cocos and Carnegie ridges cannot be explained by standard plume-hotspot theory.

5. The extent and quality of the age data reported here should, in combination with geochemical and geophysical data from other SO144 projects, provide important new insights into fundamental mantle plume theory.

6. Laufende Arbeiten

6.1 Phase 1, Temporal-Spatial Development of the GHS

Reconstruct the temporal-spatial distribution of the GHS using high precision SO144-3 $^{40}Ar/^{39}Ar$ ages. The following wide range of multi-disciplinary themes/goals/questions must be carefully researched in light of this key new information:

Hotspot spreading ridge interaction

- Establish the origin of the aseismic ridges and associated seamounts (e.g., are all of the structures generally linked to long-lived Galápagos plume(s)?)
- Reconstruct the temporal-spatial relationship between the GHS and the Galápagos spreading center. This phase involves co-operation with geophysicists studying seafloor age determinations and the spatial-temporal development of the Galápagos spreading center.
- Evaluate our new information/inferences concerning the role of plume–ridge interaction in the spatial-temporal development of the GHS in the light of SO144-3 trace element and isotope analyses of data sets. This extensive, ongoing companion

SO144-3 project is characterizing the mantle sources involved in GHS magmatism (e.g., are they ocean island basalt, mid-ocean ridge basalt, or do they result from plume–ridge interaction?).

- Report new/modified models (if appropriate) for the spatial-temporal development of the GHS and the role of plume-spreading center interplay, taking into account new (SO144) and published GHS geochemical and geophysical information. This will contribute to the ongoing world-wide research (e.g., InterRidge, D-Ridge) into the role of plume–ridge interaction on the style, distribution and composition of hotspot volcanism.

Paleo-Galapagos Archipelago

- In combination with SO144 geochemical and geophysical results, help reconstruct whether and how the morphology of the volcanic structures built by the Galápagos hotspot has changed since the mid-Miocene, and also if the Paleo-Galápagos Archipelago has been a permanent feature since 14.5 Ma (e.g., Christie et al., 1992; Werner et al., 1999).

Plate motion, hotspot reference frame, hotspot fixity

- Once the spatial-temporal development of the GHS has been reconstructed on the basis of the new SO144-3 $^{40}Ar/^{39}Ar$ ages (together with geochemical and geophysical information) we must establish which parts, if any, of the GHS record the migration of the Cocos and Carnegie tectonic plates, respectively, over the Galápagos plume.
- We expect to answer questions such as whether the Cocos Ridge is linked solely to the activity of the Galápagos plume or was formed by a separate "Cocos Island plume" (Meschede et al., 1997; 1998)? Furthermore, we will likely be able to establish the origins of the enigmatic Coiba and Malpelo Ridges.
- Reconstruct the absolute motion of the Nazca and Cocos Plates based on the migration rates and directions of volcanism along the Cocos and Carnegie Ridges.
- Combine the migration rates of volcanism along the Carnegie and Cocos Ridges with those already determined for the Foundation (SO 100), Easter (SO 80) and Juan Fernandez (SO 101) volcanic chains, in order to develop a high-resolution integrated reconstruction of Nazca, Cocos and Pacific Plate absolute motions.

- Evaluate this information in the context of the ongoing debate as to whether hotspots are indeed fixed in the lower mantle and so can be used as a reliable plate motion reference frame.
- Establish whether our new plate motion information has implications for the development of other hotspot-plume systems (e.g., Easter, Juan Fernandez).

6.2 Phase 2, Mantle Plume Theory

The temporal-spatial-geochemical distribution of volcanism formed by a plume-hotspot is believed widely to reflect the activity of mantle plumes upwelling from depth. Thus, detailed age and compositional control of the evolution of important hotspot trails, such as the GHS, can reveal new insights into long-held, largely untested ideas about plume-spreading processes and mantle plume dynamics.

Galápagos plume theory has long been influenced by the spatial and geochemical variation in lavas from the recent Galápagos Islands. More recently, a geochemical profile across the presumed Galápagos hotspot track off the coast of Costa Rica has suggested that similar zonation has existed for at least the last 14 Myr (e.g., Werner et al., 1999). Ongoing geochemical analyses (major and trace element, radiogenic isotope ratios) of SO144-3 samples from the Cocos Ridge show a similar zonation for the time interval between the formation of this 14 Myr old profile and the recent Galápagos Archipelago. This has led to a published GHS model in which plume material can ascend from the lower mantle (core-mantle boundary?), with little 'stirring' occurring during ascent, and the 'zonation' in hotspot lavas reflecting spatial heterogeneity within the lower mantle source.

We will use our results/inferences/model to:

- Test the current plume model explaining the well established GHS geochemical zonation.

- Modify Galápagos plume model/theory, if necessary

- Establish the broad implication of any new/modified Galápagos plume model for plume-hotspot theory in general

The final objective of this project is a better understanding of hotspot magmatism and mantle plume processes based on the temporal-spatial distribution and geochemical variability of the GHS. Initial interpretation of our results (see section 6.5) reveals the complexity of the GHS and highlights the fact that reduction, interpretation and publication of the SO144-3 data – evaluated in conjunction with companion SO144 geochemical and geophysical studies – have a high likelihood of making a significant contribution to our following long-term research themes:

- inferring mantle and lithospheric processes controlling distribution and geochemical variability of hotspot volcanism
- plume-ridge interaction
- absolute plate motion reconstruction
- mantle plume fixity
- role of plumes in active (and passive) margin development and in creating 'Large Igneous Provinces' (LIPs).
- mantle plume theory

7. Ergebnisse Dritter

Realizing fully the scientific benefit from our project requires interpreting our data in the context of the extensive geochemical and geophysical SO144 data sets already determined by our colleagues (SO144 report by Flüh et al., June 2002).

Danksagung

We thank the BMBF for supporting this project and the Projektträger BEO for controlling this project in a helpful and efficient way. Special thanks go to Kapitän Andresen and crew of the FS SONNE for once again providing unstinting help and cooperation.

Anlage 1

Sample information

SO144/3 Sample Information

Sample	Location Name	Location Coordinates	Depth (m)	Description
		Dredge	on bottom	
		Dredge	off bottom	
SO144/3-3TVG-4	**Malpelo Ridge**	04°28.02' N 080°54.34' W	916	Vesicular fine grained plagioclase basalt. Small plagioclase phenocrysts (10%) in a reddish grey groundmass.
		04°28.00' N 080°54.30' W	908	Vesicles are lined with chlorite and filled with soft orange clay. MnOx crust up to 5 mm wide: Unit A (20 x 9 cm)
SO144/3-5DR-1	**Malpelo Ridge**	04°33.94' N 080°41.98' W	1639	Dense blue-grey aphyric basalt. Flow banded, with each band about 1 mm wide (lighter/darker).
		04°33.67' N 080°42.15' W	1530	Some bands are iron-stained. Rare vesicles are up to 2 cm long and filled with soft clay: Unit A (27 x 13 cm).
SO144/3-6DR-1	**Malpelo Ridge**	04°09.32' N 081°16.51' W	1564	Green-grey dense fine grained basalt. Groundmass olivine slightly discoloured, plagioclase fresh.
		04°09.42' N 081°16.69' W	1398	A few thin veinlets of zeolite, and a 1 mm thick chloritic rind to the rock: Unit A (16 x 8 cm).
SO144/3-7DR-1	**Malpelo Ridge**	04°19.92' N 081°52.48' W	3000	Green-grey dense fine grained aphyric basalt. Groundmass olivine appears fresh: Unit A (19 x 3 cm).
		04°18.80' N 081°52.29' W	2450	
SO144/3-11aDR-21	**Carnegie Ridge**	00°03.33' N 082°07.34' W	1446	Pale blue-grey vesicular plagioclase basalt. Plagioclase phenocrysts (5%) are up to 0.5 mm long. Olivine microphenocrysts
		00°04.25' N 082°07.70' W	1456	(20%) are partly pseudomorphed by iddingsite: Unit D (11 x 5 cm).
SO144/3-13DR-1	**Carnegie Ridge**	00°26.20' S 081°59.51' W	1250	Brown-grey highly vesicular fine grained basalt. Groundmass of plagioclase and olivine pseudomorphed by iddingsite. Vesicles
		00°25.49' S 081°59.59' W	1184	(20-30%) are banded and range in size from very small to 5 mm; filled with pale clay near the rim: Unit A (12 cm in diameter).
SO144/3-17TVG-1	**Carnegie Ridge**	02°09.83' S 082°36.64' W	1899	Olivine-clinopyroxene basalt. Dark green clinopyroxene phenocrysts (30%) up to 5 mm long, whereas small olivine
		02°09.91' S 082°36.77' W	1932	phenocrysts (5%) are all pseudo-morphed by iddingsite: Unit A (20 x 11 cm)
SO144/3-18DR-1	**Carnegie Ridge**	02°13.55' S 083°40.94' W	2449	Vesicular olivine basalt. Olivine phenocrysts (10%) up to 2 mm across, often clustered, and many contain or are surrounded by
		02°13.27' S 083°41.51' W	2200	an opaque mineral.The groundmass contains fine grained pyroxene. Small vesicles (15%) often filled by green clay or zeolite. The boulder is a pillow fragment, and its outer 15 mm is more weathered than the interior: Unit A (17 x 6 cm)
SO144/3-19DR-5	**Carnegie Ridge**	02°15.94' S 084°25.65' W	2381	Vesicular fine grained olivine basalt. Small olivine phenocrysts (5%) partly pseudomorphed by iddingsite near rock rim.
		02°15.30' S 084°26.18' W	2009	Small vesicles (15%) often filled by soft white clay or harder zeolite. Intermittently developed black glassy zone 2 mm wide at rock rim. Interpreted as a pillow fragment. MnOx crust usually <2 mm wide: Unit A (15 x 10 cm).
SO144/3-26TVG-1	**Carnegie Ridge**	00°18.01' N 084°58.54' W	1388	Vesicular plagioclase basalt. Large plagioclase phenocrysts (20%) up to 5 mm across in a fine grained plagioclase-pyroxene
		00°18.02' N 084°58.45' W	1402	groundmass. A few dark green clinopyroxene phenocrysts (<5%). Vesicles (10%) mostly empty, but some filled with green clay. Fractures and outer 1 cm of rock are weathered, rock interior fresh. MnOx crust 2 mm thick. Pillow fragment: Unit A (30 x 17 cm).
SO144/3-28DR-1	**Carnegie Ridge**	02°04.26' S 085°55.00' W	2495	Blue-grey vesicular aphyric fine grained basalt. Small vesicles (20%) are empty. Groundmass is cryptocrystalline.
		02°03.67' S 085°55.04' W	2106	Outer 5 mm is more weathered. A pillow fragment: Unit A (-1: 22 x 11 cm).
SO144/3-85DR-1	**Fisher Ridge**	08°52.25' N 085°38.49' W	2537	Black aphyric basalt. Outer 1 cm is rounded and slightly weathered. 5% small empty vesicles: Unit A (11 x 8 cm).
		08°51.94' N 085°38.14' W	2165	
SO144/3-89aDR-1	**Coiba Ridge**	06°06.03' N 081°47.47' W	1041	Dense brownish grey pyroxene basalt. Pyroxene phenocrysts (5%) up to 1 mm long. Groundmass appears crystalline, but
		06°05.90' N 081°47.60' W	845	consists of pale grey and greenish grey patches which is probably a weathering effect. Moderately weathered, with dark clays along joints and traces of a bright copper-coloured sulphide mineral (pyrrhotite?): Unit A (12 x 8 cm).
SO144/3-90DR-1	**Coiba Ridge**	05°35.55' N 081°35.07' W	1517	Reddish grey vesicular plagioclase basalt. Plagioclase phenocrysts (5%) up to 1.5 mm long in a relatively coarse-grained

		05°35.98' N 081°35.25' W	1029	groundmass containing plagioclase and pyroxene. Vesicles (15%) are usually elongate and vuggy, and up to 1.5 cm long. Soft green clay in some vesicles: Unit A (10 x 7 cm
SO144/3-32DR-1	**Cocos Ridge**	03°27.60' N 090°37.00' W 03°27.56' N 090°36.63' W	1458 1224	Dark grey extremely vesicular olivine basalt. Olivine phenocrysts (10%) are large (up to 6 mm long) and generally colourless and partly altered. Trace amounts of large plagioclase phenocrysts. Vesicles (50%) are up to 3 mm long and empty. Outermost 2 cm of rock is more weathered: Unit A (10 x 7 cm).
SO144/3-33DR-1	**Cocos Ridge**	03°53.88' N 089°13.62' W 03°53.44' N 089°13.64' W	1694 1492	Dark grey dense fine grained olivine basalt. Olivine phenocrysts (5%) are small (<0.2 mm across) and partly pseudomorphed by iddingsite. Traces of pyroxene phenocrysts (<2%), groundmass is fresh with a few empty small vesicles. Thin (<1 mm) MnOx crust, hard white clay, altered rock fragments and forams fill some fracture surfaces: Unit A (21 x 11 cm).
SO144/3-38DR-12	**Cocos Ridge**	04°21.59' N 085°47.05' W 04°21.92' N 085°47.39' W	2419 2197	Black vesicular olivine basalt. Olivine phenocrysts (10%) are fresh and up to 1 mm across. Groundmass is fine grained and also olivine-bearing (fresh). Vesicles (30 %) are mostly empty and banded with large (up to 5 mm across) vesicles at pillow cores and small numerous vesicles (<1 mm) at pillow rims. Black glassy rim zone is 5 mm wide. A pillow fragment. Unit A (15 x 9 cm)
SO144/3-40aDR-1	**Cocos Ridge**	04°38.62' N 087°21.95' W 04°37.87' N 087°22.05' W	2019 1635	Black highly vesicular plagioclase basalt. Plagioclase phenocrysts (5%) are small (<1 mm across). Trace olivine phenocrysts are also small and fresh pale green. Vesicles (20-50%) are largest at pillow cores and bases (2 mm) and smaller but more numerous at pillow rims. Glassy rim up to 5 mm thick. Extremely fresh rock in appearance: Unit A (15 x 6 cm).
SO144/3-41DR-1	**Cocos Ridge**	04°40.46' N 087°54.59' W 04°40.07' N 087°54.15' W	2285 2035	Dark grey olivine-plagioclase basalt. Olivine phenocrysts (5%) are up to 4 mm across and most are pseudomorphed by iddingsite. Plagioclase phenocrysts (10%) are much smaller (seldom 2 mm long) and fresh. Vesicles (5%) are small. Some pull-apart structures in the lava. A pillow fragment. Weathered and iron-stained surface, but no MnOx crust (<1 mm thick): Unit A (15 x 6 cm).
SO144/3-42DR-1	**Cocos Ridge**	05°08.68' N 087°32.60' W 05°08.26' N 087°32.58' W	2050 1820	Grey fine grained aphyric basalt. Groundmass contains small fresh olivine crystals. Vesicles (20%) are very small (<0.1 mm) and empty. Rock surface is weakly weathered with no MnOx: Unit A (13 x 4 cm).
SO144/3-45aDR-1	**Cocos Ridge**	06°16.00' N 085°53.25' W 06°15.65' N 084°53.36' W	1644 1459	4 cm in diameter hyaloclastite. Largest clast (3 cm) is brown-grey vesicular plagioclase (5%) basalt. Vesicles (40%) are either empty or filled by dark grey very hard silica. Unit A.
SO144/3-46TVG-1	**Cocos Ridge**	06°29.43' N 085°34.25' W 06°29.43' N 085°34.78' W	634 634	Dark grey vesicular plagioclase basalt. Small plagioclase phenocrysts (5%) and traces of olivine (fresh). Vesicles (40%) are small (<0.1 mm), numerous and empty. Fresh rock, with little staining. Almost certainly a clast within hyaloclastite: Unit A (13 x 8 cm).
SO144/3-47DR-7	**Cocos Ridge**	06°38.44' N 085°44.77' W 06°37.98' N 085°44.29' W	2015 1600	Black vesicular basalt. Trace fresh olivine and plagioclase phenocrysts (<1% each). Vesicles (30%) up to 3 mm across. Dark glassy 5 mm rind. Very fresh: Unit A (9 x 7 cm).
SO144/3-48DR-2	**Cocos Ridge**	06°47.74' N 085°22.88' W 06°47.20' N 085°22.97' W	1517 1252	Reddish grey vesicular pyroxene basalt. Pyroxene phenocrysts (5%) are set in a weathered groundmass. Vesicles (20%) are partly clay-filled. Hyaloclastite forms the rim of the pebble: Unit B (5 x 2 cm).
SO144/3-49aDR-1	**Cocos Ridge**	06°56.39' N 084°14.95' W 06°55.77' N 084°14.84' W	1615 1203	Dark blue vesicular aphyric basalt. Heavy. Olivine is present in the groundmass and is partly pseudomorphed by iddingsite. Vesicles (30%) are small and partly filled by orange clay. Some iron-staining: Unit A (13 x 11 cm).
SO144/3-51DR-1	**Cocos Ridge**	06°59.97' N 082°51.72' W 06°59.97' N 082°52.12' W	3289 2753	Blue-grey aphyric basalt. Trace black pyroxene phenocrysts. Groundmass has much plagioclase (30%). A few small empty vesicles. Outer 1 cm is weathered: Unit A (11 x 7 cm).
SO144/3-53DR-3	**Cocos Ridge**	07°36.24' N 083°25.21' W 07°36.46' N 083°25.21' W	1530 1365	Reddish grey vesicular aphyric basalt. Ground-mass very fine grained. Vesicles (30%) up to 3 mm across, empty at core but pale red clays fill those near the rim: Unit B (12 x 6 cm).

SO144/3-54aDR-2	**Cocos Ridge**	08°01.89' N 083°26.13' W 08°02.28' N 083°26.35' W	1477 1142	Grey plagioclase basalt. Plagioclase phenocrysts (5%) up to 2 mm long in dense cryptocrystalline groundmass. Small vesicles (5%) mostly empty, but some filled by white clay: Unit B (16 x 9 cm).
SO144/3-55DR-1	**Cocos Ridge**	07°52.68' N 083°59.25' W 07°52.66' N 083°59.98' W	1366 735	Dark blue-grey fine grained aphyric basalt. Vesicles (10%) very small, and some lined with dark chlorite or filled with white clay. Weathering rind 5 mm thick: Unit A (20 x 11 cm).
SO144/3-56TVG-1	**Cocos Ridge**	07°52.18' N 084°26.38' W 07°52.11' N 084°26.40' W	978 980	Dark grey olivine basalt. Olivine phenocrysts (10%) fresh at core pseudomorphed by iddingsite near the rim. Vesicles (5%) have some orange clay in them. Outer 1 cm is weathered: Unit A (10 x 5 cm).
SO144/3-60DR-8	**Cocos Ridge**	07°23.20' N 085°11.18' W 07°23.21' N 085°11.39' W	1723 1298	Trachybasalt(?) with 30% small feldspar phenocrysts. Strong flow banding. Outer 2 cm is iron-stained: Unit D (19 x 10 cm).
SO144/3-62DR-1	**Cocos Ridge**	07°31.21' N 085°32.60' W 07°30.61' N 085°31.66' W	2090 1550	Dark grey fine-grained basalt. Trace pyroxene phenocrysts and olivine phenocrysts pseudomorphed by iddingsite: Unit A (15 x 10 cm).
SO144/3-63aDR-1	**Cocos Ridge**	07°01.80' N 086°01.07' W 07°00.91' N 086°00.48' W	2419 2084	Dark grey fine grained basalt. Trace pyroxene phenocrysts. 10% empty vesicles: Unit A (35 x 18 cm).
SO144/3-64DR-1	**Cocos Ridge**	05°45.66' N 086°54.08' W 05°45.02' N 086°54.04' W	1802 1443	Vesicular aphyric basalt. Pillow fragment but no glass. Fine-grained groundmass. Vesicles up to 4 mm in diameter, mostly lined with chlorite: Unit A (18 x 7 cm).
SO144/3-65DR-1	**Cocos Ridge**	05°44.23' N 086°47.68' W 05°44.21' N 086°48.14' W	1556 1194	Black vesicular basalt. Trace olivine phenocrysts (2%) which are small, fresh and up to 1 mm across. 30% vesicles up to 5 mm across, empty except near rim. 1 cm thick dark glassy rind: Unit A (21 x 11 cm).
SO144/3-65aDR-2	**Cocos Ridge**	05°44.18' N 086°48.15' W 05°44.04' N 086°48.67' W	1241 1069	Vesicular dark grey olivine plagioclase basalt. Olivine phenocrysts (10%) up to 3 mm across are fresh. Plagioclase phenocrysts (5%) are smaller than the olivine. 30% vesicles up to 5 mm in diameter, with the outer ones partly filled by soft orange clay. MnOx crust 1 mm thick: Unit A (16 x 6 cm).
SO144/3-67DR-1	**Cocos Ridge**	05°30.24' N 087°15.44' W 05°30.66' N 087°15.35' W	1800 1512	Black vesicular olivine basalt. Olivine phenocrysts (5%) are fresh and up to 3 mm long. There is a second set (5%) of olivine microphenocrysts also. Trace plagioclase phenocrysts also present. 30% small vesicles are empty, and up to 2 mm across. Possibly trace small pyroxene phenocrysts: Unit A (11 x 8 cm).
SO144/3-69DR-1	**Cocos Ridge**	05°12.52' N 087°56.77' W 05°11.90' N 087°56.89' W	2077 1905	Black vesicular olivine basalt. Olivine phenocrysts (10%) are pale green, but slightly discolored, and up to 1 mm across. Vesicles (30%) are up to 8 mm long and empty. Glassy rim 6 mm thick: Unit A (14 x 7 cm).
SO144/3-70bDR-1	**Cocos Ridge**	05°34.48' N 088°13.61' W 05°34.44' N 088°13.87' W	1631 1455	Dark grey olivine pyroxene basalt. Pyroxene phenocrysts (10%) up to 2 mm across. Olivine phenocrysts (5%) up to 3 mm across but most are smaller than pyroxene, fresh and pale green. 5 mm thick weathering rind. Vesicles (2%) are small: Unit A (17 x 7 cm).
SO144/3-71DR-1	**Cocos Ridge**	05°30.96' N 088°34.79' W 05°30.46' N 088°34.90' W	1251 967	Dark grey vesicular olivine basalt. Olivine phenocrysts (10%) up to 4 mm long are pale green and fresh. Trace plagioclase phenocrysts. Vesicles (10%) are small (<1 mm) and empty. More weathered in outer 2 mm: Unit A (10 x 6 cm).
SO144/3-71aDR-1	**Cocos Ridge**	05°28.47' N 088°36.64' W 05°28.59' N 088°36.17' W	1631 1294	Dark grey vesicular plagioclase olivine basalt. Olivine phenocrysts (15%) are pale green to pale brown, and up to 4 mm long. Plagioclase phenocrysts (5%) are up to 3 mm long. 30% vesicles up to 3 mm across and empty: Unit A (22 x 10 cm).
SO144/3-72aDR-1	**Cocos Ridge**	05°52.11' N 087°34.36' W 05°51.82' N 087°34.41' W	968 760	Dark grey plagioclase olivine basalt. 10% olivine phenocrysts, half are fresh, half are discoloured to pale brown, up to 3 mm across. Plagioclase phenocrysts (5%) are smaller and up to 1 mm across. Vesicles (5%) to 2 mm across and occur as 3 mm wide bands interspersed with dense lava: Unit A (16 x 8 cm).

SO144/3-73DR-1	**Cocos Ridge**	07°05.39' N 086°23.85' W 07°05.37' N 086°23.97' W	1843 1766	Grey vesicular olivine basalt. Olivine phenocrysts (<5%) up to 0.6 mm across. Possible second generation of olivine just above groundmass size. All olivine is partly discoloured to pale brown or pseudomorphed to iddingsite. Vesicles (10%) are vuggy, up to 1.5 cm long, and mostly empty. Glassy rim up to 5 mm wide. MnOx crust up to 5 mm wide: Unit A (10 x 6 cm).
SO144/3-74DR-1	**Cocos Ridge**	07°23.02' N 086°31.29' W 07°23.46' N 086°30.62' W	2210 1792	Dark grey aphyric basalt. 5% vesicles, mostly small but some up to 5 mm long and empty. Almost fresh rock: Unit A (23 x 8 cm).
SO144/3-77DR-1	**Cocos Ridge**	07°44.11' N 085°55.33' W 07°43.96' N 085°55.66' W	741 600	Dark grey vesicular olivine basalt. Olivine phenocrysts (10%) are up to 2 mm across, pale green and fresh at the core but discoloured in outer 1 cm. Vesicles (15%) are up to 3 mm across and empty. A clast within a breccia, part of which is preserved on the outer rim: Unit A (10 x 7 cm).
SO144/3-77aDR-1	**Cocos Ridge**	07°45.87' N 085°55.49' W 07°45.92' N 085°55.51' W	1591 1622	Black aphyric basalt. Vesicles (5%), some iron-stained. Iron-staining along joints. Groundmass is mostly fresh, hard and dense. Trace pyroxene phenocrysts: Unit A (17 x 8 cm).
SO144/3-78DR-1	**Cocos Ridge**	08°06.88' N 085°47.50' W 08°06.83' N 085°47.59' W	1465 1374	Dark bluish grey dense olivine pyroxene basalt. Olivine phenocrysts (5%) up to 1 mm across, pseudomorphed by iddingsite in outer 1 cm; fresh in interior. Pyroxene phenocrysts (10%) up to 3 mm across. A few small empty vesicles: Unit A (25 x 8 cm).
SO144/3-79DR-1	**Cocos Ridge**	07°58.34' N 085°33.49' W 07°58.67' N 085°33.92' W	1625 1190	Black aphyric basalt. Fresh, dense, and no vesicles: Unit A (28 x 15 cm).
SO144/3-80DR-8	**Cocos Ridge**	08°17.07' N 085°08.99' W 08°16.93' N 085°08.83' W	1751 1592	Dark grey olivine pyroxene basalt. Pyroxene phenocrysts (5%) up to 2 mm across. Olivine phenocrysts (2%) to 3 mm across, but most much smaller and pseudomorphed by iddingsite. Groundmass weathered with brown patches and pale yellow clay developed along joints: Unit B (12 x 8 cm).
SO144/3-81DR-1	**Cocos Ridge**	08°31.39' N 085°09.09' W 08°31.80' N 085°08.96' W	1726 1376	Dark grey vesicular olivine pyroxene basalt. Olivine phenocrysts (10%) up to 6 mm long, discoloured to pale brown. Pyroxene phenocrysts (5%) up to 2 mm long. Vesicles (20%) up to 5 mm across, mostly empty, those in the outer 1 cm are filled with soft white clay. MnOx crust 2 mm thick: Unit A (20 x 10 cm).
SO144/3-82DR-1	**Cocos Ridge**	08°33.93' N 085°27.83' W 08°33.53' N 085°27.26' W	1546 1148	Black vesicular aphyric basalt. Vesicles (25%) are mostly 1 mm across, some up to 1 cm across, and are almost all empty. Weathered to brown along fractures, with a 2 mm MnOx crust: Unit A (14 x 9 cm).
SO144/3-83DR-1	**Cocos Ridge**	08°27.45' N 085°34.45' W 08°27.72' N 085°34.79' W	1899 1678	Dark grey vesicular olivine basalt. Olivine phenocrysts (10%) are pale green to pale brown. Vesicles (25%) are empty, some up to 5 mm across but most are 1 mm across. Darker, glassy rim zone 1 cm wide. Pillow fragment: Unit A (14 x 6 cm).
SO144/3-84DR-2	**Cocos Ridge**	08°31.63' N 085°38.10' W 08°31.89' N 085°38.41' W	2297 1906	Dark grey aphyric basalt. Groundmass is fine grained and fresh. 5% very small vesicles, plus a few vugs up to 5 mm across. All are empty. Pillow fragment: Unit A (10 x 5 cm).
	Cocos Island			
SO144/3-Cocos-11	Cascade Waterfall - Cerro Iglesias Track			Pyroxene basalt (>4 m thick lava flow)
SO144/3-Cocos-13	Cascade Waterfall - Cerro Iglesias Track			Pyroxene basalt - debris flow ~50 m thick overlying lava flow (Cocos 11) at an elevation of 50 m above the Rio Genio
SO144/3-Cocos-15	East Chatham Bay	05°32'58.5 N 087°02'19.2 W		Pyroxene-plagioclase basalt - >7 m thick flow (#2)
SO144/3-Cocos-24	East Chatham Bay			Pyroxene-plagioclase basalt (falls lava). Sampled in situ at the base of the waterfall and is probably correlative with flow 2 (Cocos 15)

SO144/3-Cocos-26	West Chatham Bay	Olivine-plagioclase basalt - 1 m thick lava flow (middle lava).
SO144/3-Cocos-33	East Wafer Bay	Pyroxene-olivine basalt (lower lava flow)
SO144/3-Cocos-35	East Wafer Bay	Olivine-plagioclase basalt (western dyke)

Anlage 2

Argon isotopic data

SO144/3 Argon Isotopic Data

Lab ID	Heating steps	Steps used in age calculation*	^{36}Ar(a)	^{37}Ar*	^{39}Ar (K)	^{40}Ar (a+r)	Age	2s	^{40}Ar (r) (%)	39Ar (k) (%)	K/Ca
SO144/3-3TVG-4			J = 0.001909								
01M0487H	S-SFsn	1	0.04391	8.36627	0.15138	0.45116	10.2	4.4	3.4	3.7	0.01
02M0106A	M-SFsn	1	0.03765	35.80648	0.96367	2.96488	10.6	1.0	21.0	23.4	0.01
02M0146B	M-SFsn	1	0.02088	32.23010	0.79127	2.34794	10.2	1.3	27.6	19.3	0.01
02M0147A	M-SFsn	1	0.02714	25.20074	0.64739	2.07323	11.0	1.6	20.5	15.8	0.01
02M0148A	M-SFsn	1	0.02771	30.79263	0.80232	2.52946	10.8	1.3	23.6	19.5	0.01
02M0168B	M-SFsn	1	0.02370	25.58972	0.75366	2.41733	11.0	1.3	25.7	18.3	0.01
SO144/3-5DR-1			J = 0.00191								
01M0487J	S-SFsn	1	0.03146	6.79500	0.82003	3.60072	15.1	0.8	27.9	7.4	0.05
02M0059B	M-0.4w	1	0.00103	0.98548	0.31947	1.51637	16.3	0.9	83.3	2.9	0.14
02M0092A	M-0.4w	1	0.02423	2.04656	1.36146	5.94048	15.0	0.5	45.3	12.2	0.29
02M1059B	M-0.7w	1	0.00057	2.33265	0.41011	1.91747	16.0	1.0	92.0	3.7	0.08
02M1092A	M-0.7w	1	0.02904	8.78752	2.78976	12.49492	15.4	0.2	59.3	25.0	0.14
02M2059B	M-Fsn	1	0.00559	19.89508	2.24925	10.23793	15.6	0.3	86.1	20.2	0.05
02M2092A	M-Fsn	1	0.03483	26.73594	3.19546	14.37204	15.4	0.3	58.3	28.7	0.05
SO144/3-5DR-1			J = 0.001909								
02M0232B	M-0.4w	1	0.00624	1.02215	0.43988	2.06122	16.1	0.9	52.8	9.8	0.19
02M1232B	M-0.5w	1	0.00255	1.02201	0.40593	1.92884	16.3	1.6	71.9	9.1	0.17
02M2232A	M-0.7w	1	0.00512	3.08172	0.85045	3.79085	15.3	0.6	71.5	19.0	0.12
02M3232B	M-1.0w	1	0.00425	4.35264	0.78880	3.53730	15.4	1.0	73.8	17.6	0.08
02M4232B	M-1.5w	1	0.00460	8.92981	1.01080	4.67670	15.9	0.6	77.5	22.6	0.05
02M5232B	M-1.7w	1	0.00251	5.15266	0.56923	2.63507	15.9	1.6	78.0	12.7	0.05
02M6232B	M-Fsn	1	0.00176	2.75747	0.40868	1.89165	15.9	1.3	78.4	9.1	0.06
SO144/3-6DR-1			J = 0.001909								
01M0487L	S-SFsn	1	0.09007	9.71980	1.92296	6.91002	12.3	0.5	20.6	13.0	0.09
02M0091A	M-0.4w	1	0.14255	0.33461	0.42694	1.99896	16.1	3.1	4.5	2.9	0.55
02M1060A	M-0.7w	1	0.06657	1.87264	0.81994	3.13517	13.1	0.8	13.7	5.5	0.19
02M1091A	M-0.7w	1	0.12681	2.90990	1.30282	5.07354	13.4	1.1	11.9	8.8	0.19
02M2060A	M-Fsn	1	0.10315	19.26235	3.94649	14.09784	12.3	0.3	31.6	26.7	0.09
02M2091A	M-Fsn	1	0.20074	32.18942	6.38710	23.10420	12.4	0.3	28.0	43.1	0.09

SO144/3-6DR-1			J = 0.001909								
02M0212A	M-0.4w	0	0.19647	0.59524	0.36391	2.15109	20.2	5.3	3.6	5.0	0.26
02M1212A	M-0.5w	1	0.05254	0.56964	0.31232	1.12785	12.4	2.7	6.8	4.3	0.24
02M2212A	M-0.7w	1	0.11155	2.50662	0.90153	3.22075	12.3	1.3	8.9	12.4	0.15
02M3212A	M-1.0w	1	0.09457	5.34165	1.35333	4.91633	12.5	0.7	15.0	18.6	0.11
02M4212A	M-1.4w	1	0.07659	10.37741	2.05856	7.34040	12.2	0.5	24.5	28.3	0.09
02M5212A	M-1.7w	1	0.03255	6.28780	1.37511	4.96196	12.4	0.4	34.0	18.9	0.09
02M6212A	M-Fsn	1	0.02645	3.89850	0.90236	3.28892	12.5	0.5	29.6	12.4	0.10
SO144/3-7DR-1			J = 0.001908								
01M0487M	M-SFsn	1	0.04956	10.62816	0.17719	0.74313	14.4	5.1	4.8	3.8	0.007
02M0149A	M-SFsn	1	0.00978	58.18273	1.19909	4.93319	14.1	1.2	63.1	25.7	0.009
02M0150A	M-SFsn	1	0.00676	41.72927	0.89139	3.74424	14.4	1.3	65.2	19.1	0.009
02M0151A	M-SFsn	1	0.00943	44.78982	0.98915	3.98047	13.8	1.2	58.8	21.2	0.009
02M0169A	M-SFsn	1	0.00418	26.52962	0.54987	2.23393	13.9	1.6	64.4	11.8	0.009
02M1123A	M-SFsn	1	0.00731	42.04493	0.85373	3.69727	14.9	1.3	63.1	18.3	0.009
SO144/3-11aDR-21			J = 0.001902								
01M0488B	S-SFsn	1	0.03508	9.78489	0.24060	0.77287	11.0	2.1	6.9	3.2	0.011
02M0111A	M-SFsn	1	0.01167	41.78724	1.45271	4.52137	10.7	0.7	56.7	19.2	0.015
02M0152A	M-SFsn	1	0.01009	52.97134	1.78827	5.73961	11.0	0.8	65.8	23.7	0.015
02M0153A	M-SFsn	1	0.01939	53.42331	1.78016	5.75644	11.1	0.8	50.1	23.5	0.014
02M0154A	M-SFsn	1	0.01201	30.87178	1.12518	3.67517	11.2	0.8	50.9	14.9	0.016
02M0170A	M-SFsn	1	0.02385	33.88399	1.17319	4.00621	11.7	0.9	36.2	15.5	0.015
SO144/3-13DR-1			J = 0.001899								
01M0488C	S-SFsn	1	0.03984	8.30299	0.19458	0.68883	12.1	3.2	5.5	2.8	0.010
02M0112A	M-SFsn	1	0.02101	47.25043	1.67925	4.96693	10.1	0.6	44.4	24.1	0.015
02M0155A	M-SFsn	1	0.00861	26.14864	0.93390	2.89867	10.6	1.0	53.2	13.4	0.015
02M0156A	M-SFsn	1	0.01021	29.05560	1.05421	3.10488	10.1	0.9	50.7	15.1	0.016
02M0157A	M-SFsn	1	0.01747	52.49760	1.74272	5.33366	10.5	0.8	50.8	25.0	0.014
02M0171A	M-SFsn	1	0.03011	42.65169	1.35426	4.26469	10.8	1.0	32.4	19.5	0.014
SO144/3-17TVG-1			J = 0.001897								
01M0488D	M-SFsn	1	0.04976	6.31623	5.08796	24.15895	16.2	0.2	62.2	11.2	0.35

02M0085A	M-0.4w	1	0.04322	0.64743	1.50767	7.38515	16.7	0.5	36.6	3.3	1.00
02M0086A	M-0.4w	1	0.03965	0.53627	1.32249	6.47123	16.7	0.5	35.6	2.9	1.06
02M1085A	M-0.7w	1	0.03497	3.59898	5.47271	26.32402	16.4	0.2	71.8	12.1	0.65
02M1086A	M-0.7w	1	0.03374	3.08588	5.27736	25.47318	16.4	0.2	71.9	11.6	0.74
02M2085A	M-Fsn	1	0.03907	15.18869	11.30814	53.96117	16.3	0.1	82.4	24.9	0.32
02M2086A	M-Fsn	1	0.05392	20.05090	15.43584	73.65368	16.3	0.1	82.2	34.0	0.33
SO144/3-17TVG-1			J = 0.001897								
02M0213A	M-0.4w	0	0.05299	0.51419	1.09598	5.99377	18.6	0.8	27.7	5.2	0.92
02M1213A	M-0.5w	0	0.02498	0.55345	1.28581	6.62292	17.5	0.5	47.3	6.1	1.00
02M2213A	M-0.7w	0	0.03884	2.19694	3.85689	19.09469	16.9	0.2	62.5	18.3	0.75
02M3213A	M-1.0w	1	0.02705	4.79249	5.03496	24.30948	16.5	0.1	75.2	23.9	0.45
02M4213A	M-1.4w	1	0.02071	8.06388	6.29374	30.28351	16.4	0.1	83.2	29.9	0.34
02M5213A	M-1.7w	1	0.00647	2.99269	2.35612	11.35947	16.4	0.2	85.6	11.2	0.34
02M6213A	M-Fsn	1	0.00334	1.27596	1.14597	5.51323	16.4	0.5	84.8	5.4	0.39
SO144/3-18DR-1			J = 0.001893								
01M0488F	S-SFsn	1	0.10423	13.31550	0.30138	1.10124	12.4	3.7	3.5	6.5	0.01
02M0113A	M-SFsn	1	0.20194	42.60366	1.01605	3.65256	12.2	2.0	5.8	22.0	0.01
02M0114A	M-SFsn	1	0.17139	39.35532	0.93224	3.17496	11.6	2.0	5.9	20.2	0.01
02M0172A	M-SFsn	1	0.10915	35.64718	0.68342	2.04852	10.2	2.1	6.0	14.8	0.01
02M0173A	M-SFsn	1	0.12960	43.71429	0.90049	2.75836	10.4	2.0	6.7	19.5	0.01
02M0174A	M-SFsn	1	0.10360	34.19207	0.78017	2.37890	10.4	1.7	7.2	16.9	0.01
SO144/3-19DR-5			J = 0.00189								
01M0488G	S-SFsn	1	0.04783	12.24083	0.22666	0.72123	10.8	3.6	4.9	4.2	0.01
02M0115A	M-SFsn	1	0.06290	42.74813	0.99787	3.20684	10.9	1.1	14.7	18.6	0.01
02M0116A	M-SFsn	1	0.06997	47.71493	1.04007	3.15988	10.3	1.3	13.3	19.4	0.01
02M0158A	M-SFsn	1	0.05130	47.16539	1.10369	3.55625	11.0	1.3	19.0	20.6	0.01
02M0159A	M-SFsn	1	0.05898	45.87929	1.01035	3.20756	10.8	1.4	15.5	18.8	0.01
02M0160A	M-SFsn	1	0.05968	43.16856	0.98265	3.19390	11.1	1.3	15.3	18.3	0.01
SO144/3-26TVG-1			J = 0.001887								
01M0488H	S-SFsn	1	0.03924	9.50439	0.12549	0.20577	5.6	5.3	1.7	2.6	0.01
02M0107A	M-SFsn	1	0.02146	41.58262	1.12194	2.39636	7.3	0.9	27.4	22.9	0.01
02M0161A	M-SFsn	1	0.01116	34.78172	0.93288	2.18104	7.9	1.0	39.8	19.1	0.01

02M0162A	M-SFsn	1	0.01890	27.42848	0.69447	1.61719	7.9	1.4	22.5	14.2	0.01
02M0163A	M-SFsn	1	0.01825	50.55005	1.18739	2.57307	7.4	1.1	32.3	24.3	0.01
02M0175A	M-SFsn	1	0.01266	29.22716	0.82652	1.73844	7.2	1.2	31.7	16.9	0.01
SO144/3-28DR-1			J = 0.001879								
01M0488I	S-SFsn	1	0.04643	1.95138	10.28878	6.57631	2.2	0.08	32.4	12.4	2.27
02M0083A	M-0.4w	1	0.00290	0.56361	3.83276	2.41019	2.1	0.06	73.7	4.6	2.92
02M0084A	M-0.4w	1	0.00219	0.77788	5.69398	3.57517	2.1	0.03	84.6	6.9	3.15
02M1083A	M-0.7w	1	0.00236	1.36566	10.44191	6.62963	2.2	0.04	90.4	12.6	3.29
02M1084A	M-0.7w	1	0.00359	1.86781	12.73876	8.16073	2.2	0.03	88.4	15.4	2.93
02M2083A	M-Fsn	1	0.02382	3.90967	22.45909	14.08905	2.1	0.03	66.6	27.1	2.47
02M2084A	M-Fsn	1	0.01910	3.01964	17.48420	11.04528	2.1	0.03	66.1	21.1	2.49
SO144/3-28DR-1			J = 0.001879								
02M0214A	M-0.4w	1	0.00170	0.60965	4.28878	2.82580	2.2	0.1	84.8	11.0	3.02
02M1214A	M-0.5w	1	0.00117	0.55098	4.24820	2.69937	2.2	0.1	88.6	10.9	3.32
02M2214A	M-0.7w	1	0.00297	1.61525	8.77568	5.55754	2.2	0.1	86.2	22.5	2.34
02M3214A	M-1.0w	1	0.00420	1.31551	7.34647	4.55960	2.1	0.1	78.5	18.9	2.40
02M4214A	M-1.4w	1	0.00842	2.12504	8.71187	5.48533	2.1	0.1	68.7	22.4	1.76
02M5214A	M-1.7w	1	0.00449	0.64411	3.33326	2.07867	2.1	0.2	61.0	8.6	2.23
02M6214A	M-Fsn	1	0.00207	0.34699	2.22370	1.50132	2.3	0.2	71.0	5.7	2.76
SO144/3-85DR-1			J = 0.001874								
01M0489A	S-SFsn	1	0.04114	7.62669	0.09895	0.38514	13.1	4.8	3.1	3.1	0.01
02M0117A	M-SFsn	1	0.02020	44.01013	0.88459	4.28252	16.3	1.1	41.8	27.5	0.01
02M0164A	M-SFsn	1	0.01016	33.50550	0.63280	3.10647	16.5	1.4	50.9	19.7	0.01
02M0165A	M-SFsn	1	0.01310	59.36106	1.13958	5.42685	16.0	1.3	58.4	35.4	0.01
02M0167B	M-SFsn	1	0.00736	22.72625	0.46395	2.13246	15.5	1.7	49.5	14.4	0.01
SO144/3-89aDR-1			J = 0.001869								
01M0490A	S-SFsn	1	0.05487	6.47999	1.94817	9.49308	16.4	0.8	36.9	11.0	0.13
02M0061A	M-0.4W	1	0.00116	1.22013	0.43782	2.23092	17.1	0.7	86.7	2.5	0.15
02M0093A	M-0.4w	1	0.01332	1.74341	0.73849	3.70985	16.9	0.8	48.5	4.2	0.18
02M1061A	M-0.7w	1	0.00109	3.31548	1.66897	8.38243	16.9	0.2	96.3	9.4	0.22
02M1093A	M-0.7w	1	0.01017	6.48255	2.92156	14.66816	16.9	0.2	83.0	16.4	0.19
02M2061A	M-Fsn	1	0.00522	13.74327	3.48278	17.40167	16.8	0.2	91.8	19.6	0.11

02M2093A	M-Fsn	1	0.01362	23.32591	6.57584	32.52516	16.6	0.1	89.0	37.0	0.12
SO144/3-89aDR-1			J = 0.001869								
02M0215A	M-0.4w	0	0.01105	0.82372	0.45379	2.45098	18.1	0.9	42.9	5.4	0.24
02M1215A	M-0.5w	1	0.00317	1.06885	0.45967	2.30814	16.9	0.9	71.1	5.5	0.18
02M2215A	M-0.7w	1	0.00436	3.64962	1.73520	8.58380	16.6	0.3	86.9	20.6	0.20
02M3215A	M-1.0w	1	0.00365	4.95903	1.77616	8.81149	16.7	0.4	89.1	21.1	0.15
02M4215A	M-1.5w	1	0.00780	8.12559	2.47210	12.23794	16.6	0.3	84.1	29.4	0.13
02M5215A	M-1.7w	1	0.00318	3.75989	0.95423	4.76668	16.8	0.6	83.5	11.3	0.11
02M6215A	M-Fsn	1	0.00136	1.94019	0.55724	2.83157	17.1	1.0	87.5	6.6	0.12
SO144/3-90DR-1			J = 0.001865								
01M0490B	S-SFsn	1	0.03140	4.92811	0.23077	0.75314	11.0	1.8	7.5	3.6	0.02
02M0062A	M-0.4w	1	0.00187	0.90726	0.21534	0.69284	10.8	1.2	55.6	3.4	0.10
02M0094A	M-0.4w	1	0.00679	1.63239	0.47152	1.61535	11.5	1.4	44.6	7.4	0.12
02M0095A	M-0.4w	1	0.01892	1.84739	0.54744	1.87642	11.5	1.3	25.1	8.5	0.13
02M1062A	M-0.7w	1	0.00226	3.61731	0.43392	1.41306	85.0	0.7	67.9	6.8	0.05
02M1094A	M-0.7w	1	0.00644	7.18588	0.78934	2.58845	11.0	0.5	57.6	12.3	0.05
02M1095A	M-0.7w	1	0.01241	7.61675	0.82897	2.77325	11.2	0.7	43.1	12.9	0.05
02M2062A	M-Fsn	1	0.00887	15.29680	0.80737	2.63805	11.0	0.5	50.2	12.6	0.02
02M2094A	M-Fsn	1	0.01740	17.16485	0.93647	3.19637	11.5	0.6	38.3	14.6	0.02
02M2095A	M-Fsn	1	0.03236	20.99924	1.14816	3.89745	11.4	0.6	29.0	17.9	0.02
SO144/3-90DR-1			J = 0.001865								
02M0216A	M-0.4w	0	0.02214	1.13325	0.36508	1.64053	15.1	1.7	20.0	13.5	0.14
02M1216A	M-0.5w	1	0.00881	1.27965	0.24363	0.80964	11.2	1.7	23.7	9.0	0.08
02M2216A	M-0.7w	1	0.01253	4.00299	0.53705	1.76010	11.0	0.8	32.2	19.9	0.06
02M3216A	M-1.0w	1	0.00859	6.07704	0.56206	1.87684	11.2	1.0	42.5	20.8	0.04
02M4216A	M-1.4w	1	0.01126	9.29640	0.61844	2.04037	11.1	1.1	38.0	22.9	0.03
02M5216A	M-1.7w	1	0.00425	4.00464	0.18589	0.68278	12.3	2.4	35.2	6.9	0.02
02M6216A	M-Fsn	1	0.00311	3.16936	0.19219	0.64942	11.3	2.2	41.4	7.1	0.03
SO144/3-32DR-1			J = 0.00182								
01M0491C	S-SFsn	1	0.04030	7.81485	0.24731	0.26099	3.5	2.2	2.1	4.8	0.01
02M0017A	S-0.4w	1	0.00015	1.52459	0.06583	0.03479	1.7	3.5	44.2	1.3	0.02
02M0017C	S-0.4w	1	0.00005	1.38563	0.06340	0.05969	3.1	4.0	80.5	1.2	0.02

02M0108A	M-SFsn	1	0.00427	23.05035	0.98854	0.37591	1.3	0.6	23.0	19.3	0.02
02M0109A	M-SFsn	1	0.00587	31.42495	1.41065	0.62885	1.5	0.5	26.6	27.6	0.02
02M0177A	M-SFsn	1	0.00338	27.32210	1.19225	0.66465	1.8	0.9	39.9	23.3	0.02
02M0178A	M-SFsn	1	0.00852	22.70389	0.99860	0.58968	1.9	0.8	19.0	19.5	0.02
02M1017A	S-Fsn	1	0.00004	1.62980	0.02482	0.03284	4.3	11.1	72.9	0.5	0.01
02M1017C	S-Fsn	1	0.00020	1.71323	0.03376	0.02091	2.0	9.3	26.2	0.7	0.01
02M1017D	S-Fsn	1	0.00023	2.92402	0.08490	0.04955	1.9	4.3	41.7	1.7	0.01
SO144/3-33DR-1			J = 0.001815								
01M0491E	S-SFsn	1	0.03739	8.95224	0.25850	0.41362	5.2	2.1	3.6	3.5	0.01
02M0016A	S-0.4w	1	0.00015	0.90509	0.07127	0.14019	6.4	3.9	76.4	1.0	0.03
02M0016B	S-0.4w	1	0.00025	1.13813	0.09353	0.18816	6.6	3.0	72.1	1.3	0.04
02M0016C	S-0.4w	1	0.00497	1.08379	0.11712	0.25491	7.1	2.4	14.8	1.6	0.05
02M0016D	S-0.4w	1	0.00202	1.34115	0.14478	0.31572	7.1	1.9	34.6	2.0	0.05
02M0072A	M-0.4w	1	0.00124	1.33527	0.14245	0.25392	5.8	2.0	40.9	2.0	0.05
02M0104A	M-SFsn	1	0.01340	29.69044	1.36163	2.31893	5.6	0.5	36.9	18.7	0.02
02M0105A	M-SFsn	1	0.01369	33.72728	1.52749	2.60951	5.6	0.5	39.2	20.9	0.02
02M0179A	M-SFsn	1	0.00484	23.25692	0.91881	1.44701	5.2	0.8	50.3	12.6	0.02
02M0180A	M-SFsn	1	0.00829	30.10645	1.32417	2.20787	5.5	0.7	47.4	18.1	0.02
02M1016A	S-Fsn	1	0.00041	3.95432	0.09640	0.14501	4.9	3.1	54.2	1.3	0.01
02M1016B	S-Fsn	1	0.00061	4.72377	0.13305	0.19217	4.7	2.2	51.6	1.8	0.01
02M1016C	S-Fsn	1	0.00195	5.58109	0.24651	0.45079	6.0	1.3	43.9	3.4	0.02
02M1016D	S-Fsn	1	0.00055	4.92542	0.15651	0.25648	5.4	2.2	61.3	2.1	0.01
02M1072A	M-0.7w	1	0.00069	4.25669	0.29113	0.46416	5.2	1.1	69.5	4.0	0.03
02M2072A	M-Fsn	1	0.00282	16.37572	0.41356	0.56420	4.5	1.2	40.4	5.7	0.01
SO144/3-38DR-12											
01M0491G	S-SFsn	1	0.06382	3.93814	1.74723	0.30881	0.6	0.6	1.6	8.0	0.19
02M0015A	S-0.4w	1	0.00266	1.38218	0.84332	0.17536	0.7	0.3	18.2	3.9	0.26
02M0015B	S-0.4w	1	0.00870	1.53558	0.99941	0.18419	0.6	0.3	6.7	4.6	0.28
02M0015C	S-0.4w	1	0.00331	1.04419	0.61732	0.14560	0.8	0.5	13.0	2.8	0.25
02M0015D	S-0.4w	1	0.01025	1.50148	0.95219	0.22612	0.8	0.4	6.9	4.4	0.27
02M0088A	M-0.4w	1	0.01444	4.57790	3.65083	0.68445	0.6	0.2	13.8	16.7	0.34
02M1015A	S-Fsn	1	0.01050	1.50845	0.64071	0.09518	0.5	0.6	3.0	2.9	0.18
02M1015B	S-Fsn	1	0.01112	1.93266	0.84584	0.09875	0.4	0.5	2.9	3.9	0.19
02M1015C	S-Fsn	1	0.00585	1.33626	0.52386	0.07357	0.5	0.5	4.1	2.4	0.17

02M1015D	S-Fsn	1	0.01151	1.70859	0.67422	0.09380	0.5	0.4	2.7	3.1	0.17
02M1088A	M-0.7w	1	0.04929	9.75762	6.22484	1.23384	0.6	0.1	7.8	28.5	0.27
02M2088A	M-Fsn	1	0.04405	10.09455	4.09680	0.77865	0.6	0.2	5.6	18.8	0.17
SO144/3-38DR-12			J = 0.001802								
02M0217A	M-0.4w	1	0.10502	4.59468	3.49036	0.58424	0.5	0.3	1.8	21.0	0.33
02M1217A	M-0.5w	1	0.04719	2.92607	2.03832	0.49102	0.8	0.3	3.4	12.3	0.30
02M2217A	M-0.7w	1	0.10649	5.56505	3.59674	0.60962	0.6	0.3	1.9	21.6	0.28
02M3217A	M-1.0w	1	0.07825	4.96963	2.88744	0.72889	0.8	0.3	3.1	17.4	0.25
02M4217A	M-1.4w	1	0.09481	6.44445	3.21141	0.45375	0.5	0.4	1.6	19.3	0.21
02M6217A	M-Fsn	1	0.04134	3.21959	1.41093	0.19521	0.5	0.4	1.6	8.5	0.19
SO144/3-40aDR-1											
01M0491K	S-SFsn	1	0.04474	3.95306	1.10012	0.14715	0.4	0.4	1.1	9.4	0.12
02M0014A	S-0.4w	1	0.00209	1.48120	0.55223	0.11016	0.6	0.4	15.1	4.7	0.16
02M0014B	S-0.4w	1	0.00221	1.24474	0.43707	0.06944	0.5	0.4	9.6	3.7	0.15
02M0014C	S-0.4w	1	0.00262	1.40106	0.52188	0.14620	0.9	0.5	15.9	4.5	0.16
02M0014D	S-0.4w	1	0.00278	0.96630	0.35855	0.09633	0.9	0.6	10.5	3.1	0.16
02M0074A	M-0.4w	1	0.00302	4.40484	1.81050	0.30435	0.5	0.1	25.4	15.5	0.18
02M1014A	S-Fsn	1	0.00569	1.74840	0.50224	0.12030	0.8	0.5	6.7	4.3	0.12
02M1014B	S-Fsn	1	0.00339	1.21114	0.28362	0.05394	0.6	0.8	5.1	2.4	0.10
02M1014C	S-Fsn	1	0.00422	1.40922	0.35515	0.05624	0.5	0.8	4.3	3.0	0.11
02M1014D	S-Fsn	1	0.00353	1.07481	0.24928	0.04516	0.6	1.2	4.2	2.1	0.10
02M1074A	M-0.7w	1	0.00475	7.07325	2.61719	0.47238	0.6	0.2	25.1	22.4	0.16
02M2074A	M-Fsn	1	0.02181	10.49598	2.87466	0.46883	0.5	0.1	6.8	24.6	0.12
SO144/3-41DR-1			J = 0.001762								
01M0491M	S-SFsn	1	0.03710	7.99652	0.68740	1.77705	8.2	0.9	13.9	12.6	0.04
02M0013A	S-0.4w	1	0.00031	1.58298	0.26883	0.70834	8.4	0.7	88.5	4.9	0.07
02M0013B	S-0.4w	1	0.00019	1.08233	0.09866	0.22634	7.3	2.6	80.0	1.8	0.04
02M0013C	S-0.4w	1	0.00022	1.66837	0.25704	0.69794	8.6	1.1	91.6	4.7	0.07
02M0013D	S-0.4w	1	0.00012	1.50005	0.28402	0.79593	8.9	0.7	95.7	5.2	0.08
02M0070A	M-0.4w	1	0.00149	2.25316	0.77998	2.28232	9.3	0.3	83.8	14.2	0.15
02M1013A	S-SFsn	1	0.00016	2.14752	0.08021	0.21744	8.6	3.0	82.3	1.5	0.02
02M1013B	S-SFsn	1	0.00264	2.83474	0.06145	0.14532	7.5	4.2	15.7	1.1	0.01
02M1013C	S-SFsn	1	0.00012	2.51507	0.08611	0.25286	9.3	3.0	87.5	1.6	0.01

02M1013D	S-SFsn	1	0.00032	3.40208	0.12645	0.32135	8.1	2.2	77.1	2.3	0.02
02M1070A	M-0.7w	1	0.00056	6.15232	1.46702	4.20256	9.1	0.2	96.2	26.8	0.10
02M2070A	M-Fsn	1	0.00182	17.63773	1.27728	3.55165	8.8	0.4	86.8	23.3	0.03
SO144/3-41DR-1			J = 0.001762								
02M0219A	M-0.4w	1	0.02056	2.48937	0.92571664	2.77836	9.5	0.5	31.4	19.8	0.16
02M1219A	M-0.5w	1	0.00456	2.53226	0.73536563	2.15146	9.3	0.8	61.5	15.7	0.12
02M2219A	M-0.7w	1	0.00518	6.96999	1.2119359	3.48125	9.11	0.6	69.5	25.9	0.07
02M3219A	M-1.0w	1	0.00247	6.77622	0.83848945	2.32224	8.8	0.8	76.0	17.9	0.05
02M4219A	M-1.4w	1	0.00233	7.75787	0.6377844	1.72317	8.6	1.0	71.4	13.6	0.04
02M5219A	M-1.7w	1	0.00092	3.57047	0.22745573	0.63537	8.9	2.6	70.1	4.9	0.03
02M6219A	M-Fsn	1	0.00072	1.41468	0.09747798	0.32305	10.5	5.6	60.4	2.1	0.03
SO144/3-42DR-1			J = 0.001753								
01M0491N	S-SFsn	1	0.04260	2.43956	2.32267	0.74048	1.0	0.3	5.6	30.8	0.41
02M0012A	S-0.4w	1	0.00097	0.88143	1.04011	0.37542	1.1	0.2	56.6	13.8	0.51
02M0012B	S-0.4w	1	0.00080	0.83938	0.94067	0.36261	1.2	0.3	60.4	12.5	0.48
02M0012C	S-0.4w	1	0.00071	0.61166	0.79214	0.31176	1.2	0.3	59.8	10.5	0.56
02M0012D	S-0.4w	1	0.00077	0.64094	0.79612	0.29682	1.2	0.3	56.5	10.6	0.53
02M1012A	S-Fsn	1	0.00110	0.51265	0.40656	0.15703	1.2	0.7	32.6	5.4	0.34
02M1012B	S-Fsn	1	0.00101	0.61019	0.55024	0.26058	1.5	0.5	46.7	7.3	0.39
02M1012C	S-Fsn	1	0.00080	0.46012	0.34525	0.17776	1.6	1.0	43.0	4.6	0.32
02M1012D	S-Fsn	1	0.00069	0.43835	0.33555	0.18714	1.8	0.9	48.0	4.5	0.33
SO144/3-42DR-1			J = 0.001753								
02M0220A	M-0.4w	1	0.02466	2.39615	3.15896	1.23754	1.2	0.1	14.5	17.2	0.57
02M1220A	M-0.5w	1	0.00887	1.94777	2.34776	1.00536	1.4	0.3	27.7	12.8	0.52
02M2220A	M-0.7w	1	0.02363	4.35849	4.99376	1.93248	1.2	0.1	21.7	27.2	0.49
02M3220A	M-1.0w	1	0.01596	3.12629	3.46549	1.56577	1.4	0.1	24.9	18.9	0.48
02M4220A	M-1.4w	1	0.01576	2.93604	2.88693	1.20189	1.3	0.2	20.5	15.7	0.42
02M5220A	M-1.7w	1	0.00658	1.32903	1.01842	0.46275	1.4	0.4	19.2	5.5	0.33
02M6220A	M-Fsn	1	0.00319	0.53378	0.51080	0.22505	1.4	0.8	19.3	2.8	0.41
SO144/3-45aDR-1			J = 0.001911								
01M0491R	S-SFsn	1	0.03477	4.67479	0.47348	1.36465	9.9	1.0	11.7	15.1	0.04
02M0021A	S-0.4w	1	0.00006	1.05213	0.11019	0.31912	10.0	3.4	94.5	3.5	0.05

02M0021B	S-0.4w	1	0.00005	1.25413	0.16593	0.49540	10.3	1.7	96.9	5.3	0.06
02M0021C	S-0.4w	1	0.00008	0.98512	0.10275	0.29247	9.8	2.6	92.3	3.3	0.04
02M0021D	S-0.4w	1	0.00018	1.30824	0.14270	0.38666	9.3	1.8	87.6	4.5	0.05
02M0073A	M-0.4w	1	0.00096	1.71582	0.38162	1.13111	10.2	0.7	79.9	12.1	0.10
02M1021A	S-Fsn	1	0.00031	0.61310	0.03346	0.05772	5.9	9.2	38.8	1.1	0.02
02M1021B	S-Fsn	1	0.00029	1.14533	0.07432	0.18827	8.7	3.8	68.5	2.4	0.03
02M1021C	S-Fsn	1	0.00027	0.49799	0.02567	0.03958	5.3	12.7	33.5	0.8	0.02
02M1021D	S-Fsn	1	0.00029	0.95545	0.05058	0.11102	7.6	6.6	56.5	1.6	0.02
02M1073A	M-0.7w	1	0.00051	5.14566	0.82147	2.51080	10.5	0.4	94.3	26.1	0.07
02M2073A	M-Fsn	1	0.00233	8.55400	0.76059	2.25889	10.2	0.6	76.6	24.2	0.04
SO144/3-45aDR-1			J = 0.001911								
02M0221A	M-0.4w	0	0.02520	1.77454	0.39912	0.75691	6.5	1.3	9.2	13.3	0.10
02M1221A	M-0.5w	1	0.00693	2.03053	0.39964	1.39478	12.0	1.6	40.5	13.4	0.08
02M2221A	M-0.7w	1	0.00672	4.50711	0.72901	2.27645	10.7	0.8	53.4	24.4	0.07
02M3221A	M-1.0w	1	0.00326	4.96367	0.75824	2.35009	10.7	0.7	70.9	25.4	0.07
02M4221A	M-1.4w	1	0.00814	3.61315	0.36705	1.12128	10.5	1.4	31.8	12.3	0.04
02M5221A	M-1.7w	1	0.00729	2.26636	0.18551	0.53912	10.0	2.9	20.0	6.2	0.04
02M6221A	M-Fsn	1	0.00211	1.49921	0.15226	0.56356	12.7	2.6	47.5	5.1	0.04
SO144/3-46TVG-1			J = 0.001914								
01M0491S	S-SFsn	1	0.03987	3.48504	1.20370	0.50772	1.5	0.7	4.1	6.5	0.15
02M0011A	S-0.4w	1	0.00070	0.80565	0.33747	0.14831	1.5	0.7	41.8	1.8	0.18
02M0011B	S-0.4w	1	0.00125	0.96097	0.40668	0.19894	1.7	0.7	35.0	2.2	0.18
02M0011C	S-0.4w	1	0.00079	0.83199	0.33877	0.17623	1.8	0.6	43.1	1.8	0.18
02M0011D	S-0.4w	1	0.00054	0.90587	0.39494	0.18197	1.6	0.7	53.2	2.1	0.19
02M0090A	M-0.4w	1	0.00684	5.88361	4.40459	2.58141	2.0	0.2	56.0	23.7	0.32
02M1011A	S-Fsn	1	0.00026	0.38919	0.11426	0.10330	3.1	2.1	56.9	0.6	0.13
02M1011B	S-Fsn	1	0.00089	0.62068	0.19574	0.15069	2.7	1.2	36.4	1.1	0.14
02M1011C	S-Fsn	1	0.00034	0.39811	0.10247	0.04768	1.6	2.8	31.8	0.6	0.11
02M1011D	S-Fsn	1	0.00070	0.70845	0.22656	0.07360	1.1	1.1	26.1	1.2	0.14
02M1090A	M-0.7w	1	0.00873	11.43262	6.29225	3.45783	1.9	0.1	57.2	33.9	0.24
02M2090A	M-Fsn	1	0.01331	11.30248	4.55235	2.35575	1.8	0.1	37.4	24.5	0.17
SO144/3-46TVG-1			J = 0.001914								
02M0222A	M-0.4w	1	0.00553	3.25344	2.76547	1.76791	2.2	0.2	51.9	20.4	0.37

02M1222A	M-0.5w	1	0.00295	3.12801	1.96909	1.33414	2.3	0.3	60.4	14.5	0.27
02M2222A	M-0.7w	1	0.00517	5.22186	3.02218	1.84364	2.1	0.2	54.6	22.2	0.25
02M3222A	M-1.0w	1	0.00489	5.51885	2.97008	1.77286	2.1	0.2	55.0	21.9	0.23
02M4222A	M-1.4w	1	0.00348	3.94203	1.71655	0.88356	1.8	0.3	46.2	12.6	0.19
02M5222A	M-1.7w	1	0.00241	1.54116	0.53409	0.19135	1.2	0.9	21.1	3.9	0.15
02M6222A	M-Fsn	1	0.00142	1.54979	0.60938	0.35561	2.0	0.8	45.8	4.5	0.17
SO144/3-47DR-7			J = 0.001915								
01M0491T	S-SFsn	1	0.04358	4.24016	1.29731	1.17279	3.1	0.5	8.3	5.8	0.13
02M0010A	S-0.4w	1	0.00186	0.77605	0.28717	0.31693	3.8	0.8	36.5	1.3	0.16
02M0010B	S-0.4w	1	0.00243	1.28784	0.55578	0.56152	3.5	0.5	43.9	2.5	0.19
02M0010C	S-0.4w	1	0.00225	1.51358	0.62124	0.61887	3.4	0.4	48.2	2.8	0.18
02M0010D	S-0.4w	1	0.00169	0.80603	0.30073	0.34433	4.0	0.8	40.8	1.4	0.16
02M0098A	M-0.4w	1	0.01168	4.68362	2.85863	2.97486	3.6	0.1	46.3	12.9	0.26
02M1010B	S-Fsn	1	0.00282	1.16775	0.30425	0.28810	3.3	0.9	25.7	1.4	0.11
02M1010C	S-Fsn	1	0.00298	1.33757	0.38712	0.37179	3.3	0.8	29.6	1.7	0.12
02M1010D	S-Fsn	1	0.00110	0.67556	0.13876	0.15594	3.9	1.8	32.4	0.6	0.09
02M1098A	M-0.7w	1	0.02056	11.12537	5.35714	5.36149	3.5	0.1	46.9	24.1	0.21
02M2098A	M-Fsn	1	0.04895	24.95499	10.07717	9.91452	3.4	0.1	40.7	45.4	0.17
SO144/3-47DR-7			J = 0.001915								
02M0223A	M-0.4w	1	0.02183	4.10213	2.60036	2.79183	3.7	0.3	30.2	24.2	0.27
02M1223A	M-0.5w	1	0.00971	3.27144	1.75826	1.87364	3.7	0.3	39.5	16.3	0.23
02M2223A	M-0.7w	1	0.01619	5.48882	2.54924	2.63764	3.6	0.2	35.5	23.7	0.20
02M3223A	M-1.0w	1	0.01145	4.26731	1.72286	1.89816	3.8	0.4	35.9	16.0	0.17
02M4223A	M-1.4w	1	0.01266	4.22690	1.36413	1.31969	3.3	0.4	26.1	12.7	0.14
02M5223A	M-1.7w	1	0.00367	1.17071	0.36483	0.39348	3.7	1.8	26.6	3.4	0.13
02M6223A	M-Fsn	1	0.00430	1.28550	0.39682	0.32147	2.8	1.5	20.2	3.7	0.13
SO144/3-48DR-2			J = 0.001918								
01M0491U	S-SFsn	1	0.03087	7.70153	0.70195	2.26332	11.1	0.9	19.9	17.7	0.04
02M0022A	S-0.4w	1	0.00059	1.30189	0.20456	0.67575	11.4	1.2	79.5	5.1	0.07
02M0022B	S-0.4w	1	0.00062	1.24891	0.15875	0.49853	10.8	2.3	73.1	4.0	0.05
02M0022C	S-0.4w	1	0.00042	1.36125	0.13124	0.44721	11.8	1.8	78.4	3.3	0.04
02M0022D	S-0.4w	1	0.00057	1.15025	0.17192	0.56406	11.3	1.7	77.0	4.3	0.06
02M0071A	M-0.4w	1	0.00090	0.87727	0.37253	1.28795	11.9	1.0	82.8	9.4	0.18

02M1022A	S-Fsn	1	0.00085	2.45647	0.14358	0.46434	11.2	2.5	64.8	3.6	0.03
02M1022B	S-Fsn	1	0.00062	1.61919	0.08404	0.26702	11.0	3.9	59.4	2.1	0.02
02M1022C	S-Fsn	1	0.00044	1.74928	0.08269	0.30008	12.5	3.5	69.7	2.1	0.02
02M1022D	S-Fsn	1	0.00087	1.88223	0.10262	0.29554	9.9	3.1	53.5	2.6	0.02
02M1071A	M-0.7w	1	0.00155	3.29994	0.81630	2.79456	11.8	0.4	85.9	20.5	0.11
02M2071A	M-Fsn	1	0.00439	12.95716	1.00416	3.35910	11.5	0.4	72.1	25.3	0.03
SO144/3-48DR-2			J = 0.001918								
02M0224A	M-0.4w	1	0.00513	1.02498	0.47016	1.66339	12.2	1.4	52.3	12.4	0.20
02M1224A	M-0.5w	1	0.00169	1.39627	0.48144	1.73785	12.5	1.2	77.7	12.7	0.15
02M2224A	M-0.7w	1	0.00302	5.05863	0.83366	2.89011	12.0	0.8	76.4	22.0	0.07
02M3224A	M-1.0w	1	0.00289	5.23573	0.67823	2.35735	12.0	0.8	73.4	17.9	0.06
02M4224A	M-1.4w	1	0.00387	8.96722	0.80665	2.84192	12.2	0.7	71.3	21.3	0.04
02M5224A	M-1.7w	1	0.00180	4.10908	0.36151	1.25930	12.0	1.4	70.3	9.5	0.04
02M6224A	M-Fsn	1	0.00054	1.59198	0.16135	0.60652	13.0	3.4	79.0	4.3	0.04
SO144/3-49aDR-1			J = 0.001919								
01M0491X	S-SFsn	1	0.03994	11.82664	0.22574	0.54158	8.3	3.8	4.4	3.7	0.01
02M0019A	S-0.4w	1	0.00027	1.19614	0.05422	0.12842	8.2	5.7	61.5	0.9	0.02
02M0019B	S-0.4w	1	0.00026	1.13410	0.04669	0.11224	8.3	6.2	59.0	0.8	0.02
02M0019C	S-0.4w	1	0.00020	1.18271	0.04696	0.11267	8.3	4.8	65.3	0.8	0.02
02M0019D	S-0.4w	1	0.00044	1.17724	0.06861	0.14862	7.5	4.9	53.2	1.1	0.03
02M0065A	M-0.4w	1	0.00134	1.24232	0.17827	0.45008	8.7	1.7	53.1	2.9	0.06
02M0121A	M-SFsn	1	0.01359	38.25005	1.33088	3.09960	8.1	0.7	43.5	21.7	0.01
02M0181A	M-Fsn	1	0.01254	17.12735	0.54872	1.41052	8.9	1.8	27.6	9.0	0.01
02M0182A	M-Fsn	1	0.01158	25.44784	0.89303	2.25049	8.7	1.0	39.7	14.6	0.02
02M1019A	S-Fsn	1	0.00058	2.74262	0.03405	0.05216	5.3	12.4	23.4	0.6	0.01
02M1019B	S-Fsn	1	0.00086	4.05768	0.04503	0.07722	5.9	8.7	23.3	0.7	0.00
02M1019C	S-Fsn	1	0.00041	3.14747	0.03027	0.10265	11.7	11.2	46.0	0.5	0.00
02M1019D	S-Fsn	1	0.00071	4.34767	0.06035	0.15217	8.7	6.3	41.9	1.0	0.01
02M1065A	M-0.7w	1	0.01146	37.61846	2.29681	5.38987	8.1	0.4	61.4	37.5	0.03
02M2065A	M-Fsn	1	0.00335	14.66501	0.26304	0.62385	8.2	1.7	38.7	4.3	0.01
SO144/3-51DR-1			J = 0.001919								
01M0491Z	S-SFsn	1	0.06848	8.90125	0.84484	3.30257	13.5	1.5	14.0	10.0	0.04
02M0023A	S-0.4w	1	0.00313	1.36111	0.12041	0.47377	13.6	2.6	33.8	1.4	0.04

02M0023B	S-0.4w	1	0.00344	1.03949	0.12235	0.50059	14.1	2.2	33.0	1.4	0.05
02M0023C	S-0.4w	1	0.00736	1.30728	0.19533	0.80308	14.2	1.4	27.0	2.3	0.06
02M0023D	S-0.4w	1	0.00312	0.95519	0.08918	0.35327	13.7	2.9	27.7	1.1	0.04
02M0078A	M-0.4w	1	0.01948	0.52749	0.13016	0.54953	14.6	3.5	8.7	1.5	0.11
02M0099A	M-0.4w	1	0.03281	0.72635	0.17923	0.76983	14.8	3.5	7.4	2.1	0.11
02M1023A	S-Fsn	1	0.00496	2.09833	0.15603	0.59831	13.2	2.0	29.0	1.8	0.03
02M1023B	S-Fsn	1	0.00447	2.21481	0.17126	0.68123	13.7	1.9	34.0	2.0	0.03
02M1023C	S-Fsn	1	0.00646	2.89750	0.27064	1.07953	13.8	1.2	36.1	3.2	0.04
02M1023D	S-Fsn	1	0.01010	3.63781	0.36352	1.40081	13.3	1.0	31.9	4.3	0.04
02M1078A	M-0.7w	1	0.01758	3.99597	0.54428	2.05777	13.0	1.0	28.4	6.4	0.06
02M1099A	M-0.7w	1	0.03932	6.32353	0.86773	3.29845	13.1	0.9	22.1	10.3	0.06
02M2078A	M-Fsn	1	0.02944	15.32869	1.30768	4.81906	12.7	0.6	35.6	15.5	0.04
02M2099A	M-Fsn	1	0.10040	32.16604	3.08265	11.60005	13.0	0.6	28.1	36.5	0.04
SO144/3-51DR-1			J = 0.001919								
02M0225A	M-0.4w	1	0.02846	0.68836	0.13237	0.50612	13.2	4.7	5.7	4.5	0.08
02M1225A	M-0.5w	1	0.01634	1.03475	0.23031	0.86739	13.0	2.8	15.2	7.8	0.10
02M2225A	M-0.7w	1	0.01981	4.28595	0.49775	1.91958	13.3	1.3	24.7	16.8	0.05
02M3225A	M-1.0w	1	0.01510	5.23028	0.52110	2.12152	14.0	1.1	32.2	17.5	0.04
02M4225A	M-1.4w	1	0.02668	8.95262	1.00571	3.82887	13.1	0.6	32.7	33.8	0.05
02M5225A	M-1.7w	1	0.00983	3.30834	0.43163	1.74791	14.0	1.5	37.6	14.5	0.06
02M6225A	M-Fsn	1	0.00355	1.48412	0.15228	0.71602	16.2	3.3	40.5	5.1	0.04
SO144/3-53DR-3			J = 0.001916								
02M0118A	M-SFsn	1	0.03696	34.98250	1.35908	4.53738	11.5	0.7	29.3	29.1	0.02
02M0183A	M-Fsn	1	0.02370	25.24164	0.91637	2.99996	11.3	1.3	30.0	19.6	0.02
02M0184A	M-Fsn	1	0.02108	25.37224	0.92139	3.11831	11.7	0.9	33.4	19.7	0.02
02M2063A	M-Fsn	1	0.00737	15.06301	0.35264	1.13179	11.1	1.4	34.2	7.5	0.01
02M1063A	M-0.7w	1	0.00237	4.21992	0.28534	0.94221	11.4	1.0	57.3	6.1	0.03
02M1009D	S-Fsn	1	0.00164	3.11965	0.05305	0.24555	15.9	5.1	33.6	1.1	0.01
02M1009C	S-Fsn	1	0.00154	2.65521	0.03629	0.09811	9.3	7.0	17.8	0.8	0.01
02M1009B	S-Fsn	1	0.00182	3.35863	0.05989	0.21574	12.4	4.7	28.6	1.3	0.01
02M1009A	S-Fsn	1	0.00142	2.69651	0.04415	0.18745	14.6	5.5	30.9	0.9	0.01
02M0063A	M-0.4w	1	0.00344	1.38603	0.17098	0.63987	12.9	1.7	38.6	3.7	0.05
02M0009D	S-0.4w	1	0.00057	1.23580	0.05939	0.23018	13.4	4.4	57.9	1.3	0.02
02M0009C	S-0.4w	1	0.00051	0.91826	0.03383	0.10446	10.6	9.1	40.9	0.7	0.02

02M0009B	S-0.4w	1	0.00051	1.06216	0.05091	0.17211	11.7	5.5	53.2	1.1	0.02
02M0009A	S-0.4w	1	0.00036	0.90348	0.03878	0.15704	13.9	5.8	59.8	0.8	0.02
01M0492E	S-SFsn	1	0.03883	11.03804	0.29272	1.05418	12.4	3.0	8.4	6.3	0.01
SO144/3-54aDR-2			J = 0.001916								
01M0492H	S-SFsn	1	0.03511	9.20107	0.23238	0.83380	12.3	2.3	7.4	4.1	0.01
02M0026A	S-0.4w	1	0.00025	2.04448	0.07337	0.30720	14.4	3.6	80.8	1.3	0.02
02M0026B	S-0.4w	1	0.00026	1.71990	0.04720	0.17041	12.4	5.8	69.2	0.8	0.01
02M0026C	S-0.4w	1	0.00032	1.83755	0.06445	0.24577	13.1	6.5	72.4	1.1	0.02
02M0026D	S-0.4w	1	0.00028	1.98969	0.07889	0.34011	14.8	3.8	80.5	1.4	0.02
02M0064A	M-0.4w	1	0.00761	1.53131	0.20079	0.81486	13.9	1.5	26.6	3.6	0.06
02M0119A	M-SFsn	1	0.03190	43.34422	1.54551	6.01689	13.4	0.7	39.0	27.5	0.02
02M0120A	M-SFsn	1	0.01990	30.03738	1.04229	4.03894	13.3	0.8	40.7	18.5	0.01
02M0185A	M-SFsn	1	0.01141	20.51619	0.70613	2.80325	13.6	1.1	45.4	12.6	0.01
02M0186A	M-SFsn	1	0.01256	26.05025	0.83264	3.28918	13.6	1.0	47.0	14.8	0.01
02M1026A	S-Fsn	1	0.00028	3.33925	0.04302	0.16982	13.6	9.0	66.9	0.8	0.01
02M1026B	S-Fsn	1	0.00017	1.82109	0.01698	0.06110	12.4	21.7	55.5	0.3	0.00
02M1026C	S-Fsn	1	0.00026	3.01533	0.03944	0.14986	13.1	6.6	66.4	0.7	0.01
02M1026D	S-Fsn	1	0.00026	3.98085	0.04773	0.20135	14.5	5.9	72.4	0.8	0.01
02M1064A	M-0.7w	1	0.00286	4.55885	0.27630	1.09955	13.7	1.5	56.5	4.9	0.03
02M2064A	M-Fsn	1	0.00441	17.96102	0.37375	1.39434	12.8	1.3	51.7	6.6	0.01
SO144/3-55DR-1			J = 0.001903								
01M0492L	S-SFsn	1	0.03956	9.22118	0.17712	0.60445	11.7	3.9	4.9	5.1	0.01
02M0020A	S-0.4w	1	0.00357	1.32054	0.05694	0.20575	12.4	4.3	16.3	1.6	0.02
02M0020B	S-0.4w	1	0.00295	1.65597	0.06702	0.22890	11.7	4.9	20.8	1.9	0.02
02M0020C	S-0.4w	1	0.00030	1.58689	0.04359	0.14902	11.7	9.2	62.5	1.3	0.01
02M0020D	S-0.4w	1	0.00024	1.75697	0.04795	0.17629	12.6	4.7	71.7	1.4	0.01
02M0066A	M-0.4w	1	0.01419	1.87784	0.12302	0.40762	11.3	2.7	8.9	3.6	0.03
02M0102A	M-SFsn	1	0.04270	25.16570	0.72192	2.37237	11.3	1.2	15.8	20.9	0.01
02M0102B	M-SFsn	1	0.00955	8.86818	0.14849	0.49827	11.5	3.1	15.0	4.3	0.01
02M0187A	M-SFsn	1	0.03383	30.76850	0.77581	2.52906	11.2	1.3	20.2	22.5	0.01
02M0188B	M-SFsn	1	0.03794	18.40879	0.59462	1.94110	11.2	1.5	14.8	17.2	0.01
02M1020A	S-Fsn	1	0.00291	5.31866	0.10769	0.35672	11.3	3.7	29.3	3.1	0.01
02M1020B	S-Fsn	1	0.00065	3.70231	0.05882	0.20493	11.9	6.7	51.4	1.7	0.01
02M1020C	S-Fsn	1	0.00088	3.47376	0.03702	0.06818	6.3	8.0	20.7	1.1	0.00

02M1020D	S-Fsn	1	0.00068	3.23859	0.03495	0.08669	8.5	10.6	30.2	1.0	0.00
02M1066A	M-0.7w	1	0.00877	5.04630	0.20114	0.70500	12.0	1.6	21.4	5.8	0.02
02M2066A	M-Fsn	1	0.00660	15.48994	0.25693	0.75606	10.1	1.4	27.9	7.4	0.01
SO144/3-56TVG-1			J = 0.001883								
01M0492Q	S-SFsn	1	0.03334	6.76505	0.27870	0.93245	11.3	2.1	8.6	3.9	0.02
02M0027A	S-0.4w	1	0.00028	1.27399	0.07331	0.25034	11.6	4.0	75.2	1.0	0.02
02M0027B	S-0.4w	1	0.00058	1.98303	0.16396	0.52855	10.9	1.7	75.5	2.3	0.04
02M0027C	S-0.4w	1	0.00031	1.16938	0.05862	0.15929	9.2	5.4	63.8	0.8	0.02
02M0027D	S-0.4w	1	0.00075	1.64549	0.13689	0.46649	11.5	2.5	67.7	1.9	0.04
02M0077A	M-0.4w	1	0.00602	2.01763	0.33902	1.21848	12.2	0.8	40.7	4.8	0.07
02M0097A	M-0.4w	1	0.05439	3.23532	0.63560	2.37368	12.6	1.2	12.9	8.9	0.08
02M1027A	S-Fsn	1	0.00027	1.47300	0.02691	0.08753	11.0	10.8	52.2	0.4	0.01
02M1027B	S-Fsn	1	0.00044	2.63163	0.05054	0.19499	13.1	6.6	60.1	0.7	0.01
02M1027C	S-Fsn	1	0.00044	1.87715	0.03581	0.10162	9.6	10.3	43.9	0.5	0.01
02M1027D	S-Fsn	1	0.00048	2.53864	0.07549	0.26539	11.9	5.3	65.1	1.1	0.01
02M1077A	M-0.7w	1	0.00311	5.33836	0.60909	2.17889	12.1	0.4	70.3	8.5	0.05
02M1097A	M-0.7w	1	0.05540	10.55636	1.18862	4.38271	12.5	0.6	21.1	16.7	0.05
02M2077A	M-Fsn	1	0.00545	19.82044	0.85227	2.90725	11.6	0.6	64.3	11.9	0.02
02M2097A	M-Fsn	1	0.04128	42.44988	2.60746	9.50012	12.3	0.4	43.8	36.6	0.03
SO144/3-56TVG-1			J = 0.001883								
02M0226A	M-0.4w	1	0.04960	1.77120	0.40964	1.54697	12.8	1.8	9.5	12.4	0.10
02M1226A	M-0.5w	1	0.02214	2.04948	0.36812	1.27702	11.8	1.9	16.3	11.2	0.08
02M2226A	M-0.7w	1	0.03440	6.12393	0.72536	2.78225	13.0	0.9	21.5	22.0	0.05
02M3226A	M-1.0w	1	0.01371	6.32693	0.50420	1.85486	12.5	1.2	31.4	15.3	0.03
02M4226A	M-1.4w	1	0.01453	13.32304	0.85300	3.16523	12.6	0.8	42.4	25.9	0.03
02M5226A	M-1.7w	1	0.00218	4.46540	0.21591	0.81214	12.7	2.6	55.8	6.6	0.02
02M6226A	M-Fsn	1	0.00219	3.12324	0.21815	0.74395	11.6	2.3	53.4	6.6	0.03
SO144/3-60DR-8		*Plagioclase*	J = 0.001874								
01M0492S	S-SFsn	1	0.00239	2.58632	2.11488	7.75545	12.4	0.2	91.6	42.1	0.35
02M1028A	S-Fsn	1	0.00029	0.74588	0.61861	2.26641	12.3	0.4	96.4	12.3	0.36
02M1028B	S-Fsn	1	0.00014	0.86793	0.74422	2.75509	12.5	0.4	98.4	14.8	0.37
02M1028C	S-Fsn	1	0.00010	0.89988	0.72963	2.71214	12.5	0.5	98.9	14.5	0.35
02M1028D	S-Fsn	1	0.00020	1.03027	0.81048	3.02554	12.6	0.4	98.1	16.2	0.34

SO144/3-60DR-8		*Plagioclase*	J = 0.001874								
02M0263A	S-SFsn	1	0.00096	0.30897	0.26739	0.94471	11.9	2.0	77.0	3.8	0.37
02M0263C	S-SFsn	1	0.00410	0.54372	0.43438	1.56021	12.1	1.3	56.3	6.2	0.34
02M0263D	S-SFsn	1	0.00085	0.39721	0.27830	1.03841	12.6	2.3	80.5	4.0	0.30
02M0263E	S-SFsn	1	0.00079	0.40549	0.27606	1.01836	12.4	2.1	81.4	4.0	0.29
02M0263F	S-SFsn	1	0.00151	0.43084	0.31832	1.20328	12.7	1.8	73.0	4.6	0.32
02M0263H	S-SFsn	1	0.00291	1.39008	1.14412	4.16196	12.3	0.5	82.8	16.4	0.35
02M0263I	S-SFsn	1	0.00122	0.29923	0.23048	0.85293	12.5	2.6	70.2	3.3	0.33
02M0263J	S-SFsn	1	0.00308	1.72867	1.43403	5.32147	12.5	0.4	85.4	20.6	0.36
02M0263K	S-SFsn	1	0.00257	0.48855	0.41599	1.51426	12.3	1.7	66.6	6.0	0.37
02M0263M	S-SFsn	1	0.00103	0.71795	0.55285	1.95036	11.9	1.2	86.5	7.9	0.33
02M0263N	S-SFsn	1	0.00144	0.58602	0.49195	1.83807	12.6	1.2	81.1	7.1	0.36
02M0263O	S-SFsn	1	0.00200	1.36170	1.11141	4.09949	12.4	0.5	87.4	16.0	0.35
SO144/3-62DR-1			J = 0.001865								
01M0492T	S-SFsn	1	0.04132	7.64602	2.63570	10.20633	13.0	0.3	45.5	43.8	0.15
02M0029A	S-0.4w	1	0.00024	1.12333	0.46462	1.77485	12.8	0.8	96.1	7.7	0.18
02M0029B	S-0.4w	1	0.00047	1.02345	0.49766	1.87184	12.6	0.6	93.0	8.3	0.21
02M0029C	S-0.4w	1	0.00041	1.37128	0.76627	2.90091	12.7	0.5	96.0	12.7	0.24
02M0029D	S-0.4w	1	0.00031	1.01218	0.38321	1.36992	12.0	1.0	93.7	6.4	0.16
02M1029A	S-Fsn	1	0.00050	1.86651	0.26047	0.93330	12.0	1.1	86.4	4.3	0.06
02M1029B	S-Fsn	1	0.00067	1.86712	0.36293	1.34988	12.5	0.8	87.2	6.0	0.08
02M1029C	S-Fsn	1	0.00053	2.10012	0.40065	1.48703	12.4	0.8	90.5	6.7	0.08
02M1029D	S-Fsn	1	0.00037	1.67660	0.24936	0.88531	11.9	1.4	89.0	4.1	0.06
SO144/3-62DR-1			J = 0.001865								
02M0227A	M-0.4w	0	0.03008	1.50118	2.05037	9.30382	15.2	0.2	51.1	12.4	0.59
02M1227A	M-0.5w	0	0.01138	1.74468	2.11161	9.06099	14.4	0.3	72.9	12.8	0.52
02M2227A	M-0.7w	0	0.01625	4.95804	3.65352	14.13214	13.0	0.3	74.6	22.2	0.32
02M3227A	M-1.0w	1	0.01035	4.74652	2.48015	9.26166	12.5	0.2	75.2	15.0	0.22
02M4227A	M-1.4w	1	0.00940	10.84341	4.11651	15.37684	12.5	0.1	84.7	25.0	0.16
02M5227A	M-1.7w	1	0.00157	3.11346	1.08209	4.12713	12.8	0.5	89.9	6.6	0.15
02M6227A	M-Fsn	1	0.00113	2.57857	0.98558	3.79782	12.9	0.5	91.9	6.0	0.16
SO144/3-63aDR-1			J = 0.001857								

02M0228A	M-0.4w	0	0.08601	1.25843	0.90792	3.96680	14.6	1.2	13.5	19.9	0.31
02M1228A	M-0.5w	1	0.02747	1.56196	0.67964	2.55268	12.5	0.7	23.9	14.9	0.19
02M2228A	M-0.7w	1	0.01738	5.76801	1.07854	4.15499	12.9	0.5	44.7	23.6	0.08
02M3228A	M-1.0w	1	0.00770	5.53405	0.70984	2.66984	12.6	0.7	54.0	15.6	0.06
02M4228A	M-1.4w	1	0.00318	11.12740	0.85929	3.22711	12.5	0.7	77.4	18.8	0.03
02M6228A	M-Fsn	1	0.00205	4.50073	0.32687	1.28267	13.1	1.6	67.9	7.2	0.03
Ɔ144/3-64DR-1											
01M0492W	S-SFsn	1	0.03922	6.85714	3.01939	3.76655	4.2	0.2	24.5	41.2	0.19
02M0008A	S-0.4w	1	0.00068	1.44234	0.71437	0.89156	4.2	0.3	81.5	9.7	0.21
02M0008B	S-0.4w	1	0.00053	1.40877	0.70307	0.90969	4.3	0.3	85.4	9.6	0.21
02M0008C	S-0.4w	1	0.00080	1.11883	0.53107	0.65693	4.1	0.4	73.6	7.2	0.20
02M0008D	S-0.4w	1	0.00058	1.66012	0.87756	1.17668	4.5	0.3	87.2	12.0	0.23
02M1008A	S-Fsn	1	0.00031	0.87408	0.28460	0.38537	4.5	0.8	80.5	3.9	0.14
02M1008B	S-Fsn	1	0.00051	0.98792	0.32931	0.40408	4.1	0.7	73.0	4.5	0.14
02M1008C	S-Fsn	1	0.00110	1.01559	0.29903	0.35952	4.0	0.9	52.6	4.1	0.13
02M1008D	S-Fsn	1	0.00079	1.50859	0.57518	0.69368	4.0	0.4	74.7	7.8	0.16
SO144/3-65DR-1			J = 0.001842								
01M0492X	S-SFsn	1	0.03442	5.66715	1.41798	1.57300	3.7	0.5	13.4	8.0	0.11
02M0007A	S-0.4w	1	0.00193	1.21356	0.34366	0.34158	3.3	0.6	37.5	1.9	0.12
02M0007B	S-0.4w	1	0.00236	1.16194	0.41466	0.42970	3.4	0.6	38.1	2.4	0.15
02M0007C	S-0.4w	1	0.00149	1.08891	0.27252	0.22285	2.7	1.0	33.5	1.5	0.11
02M0007D	S-0.4w	1	0.00162	1.12168	0.31906	0.32758	3.4	0.8	40.7	1.8	0.12
02M0068A	M-0.4w	1	0.00226	4.34462	1.40059	1.63205	3.9	0.2	71.0	7.9	0.14
02M0087A	M-0.4w	1	0.00904	5.37526	2.18150	2.50639	3.8	0.4	48.4	12.4	0.17
02M1007A	S-Fsn	1	0.00097	0.61046	0.11507	0.11496	3.3	1.7	28.7	0.7	0.08
02M1007B	S-Fsn	1	0.00214	0.90976	0.26378	0.31504	4.0	0.8	33.2	1.5	0.12
02M1007C	S-Fsn	1	0.00101	0.57705	0.09283	0.06822	2.4	2.8	18.6	0.5	0.07
02M1007D	S-Fsn	1	0.00149	0.87908	0.20864	0.21649	3.4	1.2	33.0	1.2	0.10
02M1068A	M-0.7w	1	0.00609	7.52393	2.16480	2.33962	3.6	0.2	56.5	12.3	0.12
02M1087A	M-0.7w	1	0.01226	10.58251	3.36472	3.80648	3.8	0.2	51.2	19.1	0.14
02M2068A	M-Fsn	1	0.00920	10.04677	2.16928	2.20026	3.4	0.2	44.7	12.3	0.09
02M2087A	M-Fsn	1	0.01949	11.97310	2.91260	2.97956	3.4	0.2	34.1	16.5	0.10
SO144/3-65DR-1			J = 0.001842								

02M0230A	M-0.4w	1	0.01840	5.04629	1.91389	2.26426	3.9	0.3	29.4	25.1	0.16
02M1230A	M-0.5w	1	0.00698	4.15369	1.35307	1.58508	3.9	0.5	43.5	17.7	0.14
02M2230A	M-0.7w	1	0.01445	6.72406	2.03151	2.25030	3.7	0.3	34.5	26.6	0.13
02M3230A	M-1.0w	1	0.00884	4.11896	1.11020	1.34343	4.0	0.4	34.0	14.5	0.12
02M4230A	M-1.4w	1	0.00840	4.09603	0.91674	0.96282	3.5	0.6	27.9	12.0	0.10
02M6230A	M-Fsn	1	0.00239	1.46922	0.30568	0.28473	3.1	1.7	28.7	4.0	0.09
SO144/3-65aDR-2			J = 0.001834								
01M0492Y	S-SFsn	1	0.02883	3.72569	0.56375	0.51004	3.0	1.0	5.6	7.4	0.07
02M0031A	S-0.4w	1	0.00073	1.07414	0.18627	0.19297	3.4	1.6	47.4	2.4	0.07
02M0031B	S-0.4w	1	0.00109	1.10454	0.16499	0.13323	2.7	1.9	29.2	2.2	0.06
02M0031C	S-0.4w	1	0.00110	1.22202	0.18135	0.17905	3.3	1.7	35.5	2.4	0.06
02M0100A	M-0.4w	1	0.00748	4.12732	1.61703	2.05352	4.2	0.2	48.1	21.3	0.17
02M1031A	S-Fsn	1	0.00066	0.86573	0.09347	0.11933	4.2	3.0	38.0	1.2	0.05
02M1031B	S-Fsn	1	0.00019	0.56129	0.05935	0.14530	8.1	6.2	71.6	0.8	0.05
02M1031C	S-Fsn	1	0.00470	0.47569	0.04837	0.06993	4.8	6.5	4.8	0.6	0.04
02M1100A	M-0.7w	1	0.01185	13.28616	3.14232	3.69970	3.9	0.2	51.3	41.3	0.10
02M2100A	M-Fsn	1	0.03848	10.23674	1.55256	1.67979	3.6	0.4	12.9	20.4	0.07
SO144/3-65aDR-2			J = 0.001834								
02M0231A	M-0.4w	1	0.00504	3.32943	1.31045	1.60722	4.1	0.4	51.9	18.7	0.17
02M1231A	M-0.5w	1	0.00316	3.83110	1.06302	1.27472	4.0	0.5	57.7	15.2	0.12
02M2231A	M-0.7w	1	0.00519	7.43996	1.84259	2.10144	3.8	0.4	57.8	26.3	0.11
02M3231A	M-1.0w	1	0.00399	5.67370	1.25716	1.47769	3.9	0.4	55.6	17.9	0.10
02M4231A	M-1.4w	1	0.00499	5.90896	1.06718	1.08954	3.4	0.5	42.5	15.2	0.08
02M6231A	M-Fsn	1	0.00199	2.91232	0.47111	0.54731	3.8	1.1	48.1	6.7	0.07
SO144/3-67DR-1			J = 0.001813								
01M0493B	S-SFsn	1	0.06724	6.84231	1.42429	0.66901	1.5	0.6	3.3	15.1	0.09
02M0006A	S-0.4w	1	0.00673	1.18302	0.48376	0.20536	1.4	0.5	9.4	5.1	0.18
02M0006B	S-0.4w	1	0.00538	1.05561	0.30124	0.17243	1.9	1.2	9.8	3.2	0.12
02M0006C	S-0.4w	1	0.00407	0.91311	0.32573	0.12055	1.2	0.9	9.1	3.5	0.15
02M0006D	S-0.4w	1	0.00803	1.19634	0.46771	0.22083	1.5	0.8	8.5	5.0	0.17
02M0069A	M-0.4w	1	0.00762	2.58604	1.20221	0.45758	1.2	0.3	16.9	12.7	0.20
02M1006A	S-Fsn	1	0.00887	2.23240	0.35505	0.14658	1.4	1.1	5.3	3.8	0.07
02M1006B	S-Fsn	1	0.00892	1.77013	0.26483	0.10968	1.4	0.8	4.0	2.8	0.06

02M1006C	S-Fsn	1	0.00852	2.31595	0.38010	0.18905	1.6	0.6	7.0	4.0	0.07
02M1006D	S-Fsn	1	0.01045	2.35998	0.43242	0.10126	0.8	0.5	3.2	4.6	0.08
02M1069A	M-0.7w	1	0.01264	5.02389	1.76850	0.58733	1.1	0.2	13.6	18.7	0.15
02M2069A	M-Fsn	1	0.03068	11.94555	2.03317	0.70655	1.1	0.3	7.2	21.5	0.07
SO144/3-67DR-1			J = 0.001813								
02M0233A	M-0.4w	1	0.01413	1.54538	1.10267	0.41069	1.2	0.7	9.0	11.6	0.31
02M1233A	M-0.5w	1	0.00600	1.27160	0.79992	0.33545	1.4	0.7	15.9	8.4	0.27
02M2233A	M-0.7w	1	0.02016	3.96865	1.74880	0.57395	1.1	0.3	8.8	18.4	0.19
02M3233A	M-1.0w	1	0.01832	4.50503	1.65944	0.65830	1.3	0.4	10.8	17.5	0.16
02M4233A	M-1.5w	1	0.02963	8.15141	2.30986	0.71863	1.0	0.4	7.6	24.3	0.12
02M5233A	M-1.7w	1	0.01663	4.32619	1.03691	0.36999	1.2	0.6	7.0	10.9	0.10
02M6233A	M-Fsn	1	0.01075	3.00638	0.84303	0.33997	1.3	0.6	9.7	8.9	0.12
SO144/3-69DR-1			J = 0.001807								
01M0493C	S-SFsn	1	0.17056	12.50462	2.74665	4.55764	5.4	0.6	8.3	12.4	0.09
02M0005A	S-0.4w	1	0.03057	1.56558	0.41437	0.74077	5.8	1.2	7.6	1.9	0.11
02M0005B	S-0.4w	1	0.04494	2.34540	0.66576	1.12730	5.5	1.0	7.8	3.0	0.12
02M0005C	S-0.4w	1	0.02208	1.46177	0.40877	0.62830	5.0	1.3	8.8	1.8	0.12
02M0005D	S-0.4w	1	0.04093	1.80873	0.62427	0.97101	5.1	0.9	7.4	2.8	0.15
02M0075A	M-0.4w	1	0.02303	1.66651	0.61534	0.97499	5.2	0.6	12.5	2.8	0.16
02M0082B	M-0.4w	1	0.15230	7.06176	3.00917	4.95066	5.4	0.6	9.9	13.5	0.18
02M1005A	S-Fsn	1	0.02641	2.28044	0.35590	0.60883	5.6	1.2	7.2	1.6	0.07
02M1005B	S-Fsn	1	0.02746	2.85606	0.44357	0.67798	5.0	0.8	7.7	2.0	0.07
02M1005C	S-Fsn	1	0.04133	3.15595	0.53127	0.76179	4.7	0.7	5.9	2.4	0.07
02M1005D	S-Fsn	1	0.04402	4.01914	0.77211	1.17814	5.0	0.6	8.3	3.5	0.08
02M1082B	M-0.7w	1	0.18155	7.98149	3.46744	5.67196	5.3	0.5	9.6	15.6	0.19
02M2075A	M-Fsn	1	0.20505	23.82838	4.02532	6.06662	4.9	0.5	9.1	18.1	0.07
02M2082B	M-Fsn	1	0.21065	18.12160	4.14189	6.52096	5.1	0.5	9.5	18.6	0.10
SO144/3-69DR-1			J = 0.001807								
02M0234A	M-0.4w	1	0.03328	1.53232	0.77233	1.16482	4.9	0.7	10.6	8.7	0.22
02M1234A	M-0.5w	1	0.03524	1.51748	0.71820	1.11310	5.1	1.0	9.7	8.1	0.20
02M2234A	M-0.7w	1	0.08481	5.46810	1.82801	2.93998	5.2	0.6	10.5	20.7	0.14
02M3234A	M-1.0w	1	0.08378	6.73872	1.75289	2.64092	4.9	0.6	9.6	19.8	0.11
02M4234A	M-1.5w	1	0.09556	9.93337	2.09962	3.34976	5.2	0.5	10.6	23.8	0.09

02M5234A	M-1.7w	1	0.02623	4.40524	0.78452	1.08510	4.5	0.9	12.3	8.9	0.08
02M6234A	M-Fsn	1	0.03353	3.21712	0.87565	1.32634	4.9	0.7	11.8	9.9	0.12
SO144/3-70bDR-1			J = 0.001792								
01M0493D	S-SFsn	1	0.03237	2.91061	8.12390	14.52363	5.8	0.1	60.3	41.5	1.20
02M0004A	S-0.4w	1	0.00208	0.31929	1.18169	2.07212	5.7	0.2	77.1	6.0	1.59
02M0004B	S-0.4w	1	0.00198	0.37259	1.36858	2.42394	5.7	0.2	80.5	7.0	1.58
02M0004C	S-0.4w	1	0.00189	0.29971	1.19984	2.10901	5.7	0.2	79.0	6.1	1.72
02M0004D	S-0.4w	1	0.00175	0.31010	1.02975	1.81568	5.7	0.2	77.8	5.3	1.43
02M1004A	S-Fsn	1	0.00605	0.65578	1.68437	3.02664	5.8	0.1	62.8	8.6	1.10
02M1004B	S-Fsn	1	0.00499	0.70893	1.55551	2.73164	5.7	0.1	64.9	7.9	0.94
02M1004C	S-Fsn	1	0.00485	0.70557	1.74761	3.11118	5.8	0.1	68.4	8.9	1.07
02M1004D	S-Fsn	1	0.00556	0.78879	1.70156	2.96113	5.6	0.2	64.3	8.7	0.93
SO144/3-70bDR-1			J = 0.001792								
02M0235A	M-0.4w	1	0.00488	0.35337	2.18005	3.94103	5.8	0.2	73.2	7.5	2.65
02M1235A	M-0.5w	1	0.00478	0.38568	2.27322	4.16883	5.9	0.2	74.7	7.8	2.53
02M2235A	M-0.7w	1	0.00699	1.23415	4.56764	8.09908	5.7	0.1	79.7	15.7	1.59
02M3235A	M-1.0w	1	0.00721	1.42223	4.27339	7.69322	5.8	0.1	78.3	14.7	1.29
02M4235A	M-1.5w	1	0.01382	2.52304	7.95061	14.38073	5.8	0.1	77.9	27.3	1.36
02M5235A	M-1.7w	1	0.00944	1.50349	4.94650	8.82658	5.8	0.1	76.0	17.0	1.41
02M6235A	M-Fsn	1	0.00409	0.81968	2.92372	5.23525	5.8	0.2	81.2	10.0	1.53
SO144/3-71DR-1			J = 0.001782								
01M0493E	S-SFsn	1	0.04101	7.62256	1.67389	1.98525	3.8	0.4	14.1	19.5	0.09
02M0003B	S-0.4w	1	0.00096	2.94259	0.27286	0.32296	3.8	0.9	53.2	3.2	0.04
02M0003C	S-0.4w	1	0.00062	2.20741	0.17510	0.21909	4.0	1.6	54.2	2.0	0.03
02M0003D	S-0.4w	1	0.00017	0.80079	0.21056	0.28348	4.3	1.2	85.1	2.5	0.11
02M0003E	S-0.4w	1	0.00063	1.76619	0.63080	0.78400	4.0	0.4	80.9	7.4	0.15
02M0067A	M-0.4w	1	0.00166	3.32704	1.51625	1.94212	4.1	0.2	79.8	17.7	0.20
02M1067A	M-0.7w	1	0.00172	5.91885	2.21302	2.75142	4.0	0.1	84.4	25.8	0.16
02M2067A	M-Fsn	1	0.00562	16.53606	1.88963	2.13763	3.6	0.3	56.2	22.0	0.05
SO144/3-71DR-1			J = 0.001782								
02M0236A	M-0.4w	1	0.00417	1.93629	1.11933	1.51736	4.4	0.5	55.2	14.7	0.25
02M1236A	M-0.5w	1	0.00164	1.92412	0.97771	1.18331	3.9	0.7	71.0	12.8	0.22

02M2236A	M-0.7w	1	0.00335	4.50568	1.51379	1.95880	4.2	0.4	66.4	19.9	0.14
02M3236A	M-1.0w	1	0.00249	4.92020	1.10289	1.35911	4.0	0.5	64.8	14.5	0.10
02M4236A	M-1.5w	1	0.00252	8.67778	1.65370	2.04227	4.0	0.4	73.2	21.7	0.08
02M5236A	M-1.7w	1	0.00132	4.45329	0.71811	0.85546	3.8	0.8	68.7	9.4	0.07
02M6236A	M-Fsn	1	0.00047	2.66564	0.53528	0.68299	4.1	1.1	83.0	7.0	0.09
SO144/3-71aDR-1			J = 0.001845								
02M0140A	M-0.4w	1	0.01130	6.16716	4.20135	4.58192	3.6	0.1	57.8	24.1	0.29
02M1140A	M-0.5w	1	0.00456	5.27720	2.87866	3.15653	3.7	0.2	70.1	16.5	0.23
02M2140A	M-0.7w	1	0.00353	12.93862	4.28278	4.82795	3.8	0.1	82.2	24.6	0.14
02M3140A	M-0.9w	1	0.00166	10.11324	2.66636	2.90237	3.6	0.2	85.5	15.3	0.11
02M4140A	M-Fsn	1	0.00183	20.84612	3.39819	3.67002	3.6	0.5	87.1	19.5	0.07
SO144/3-72aDR-1			J = 0.001832								
02M0141A	M-0.4w	1	0.00310	4.71737	3.50112	1.33257	1.3	0.1	59.2	21.1	0.32
02M1141A	M-0.5w	1	0.00234	5.11690	2.76492	1.01557	1.2	0.1	59.4	16.7	0.23
02M2141A	M-0.7w	1	0.00313	11.05918	4.21719	1.59936	1.3	0.1	63.3	25.5	0.16
02M3141A	M-0.9w	1	0.00214	10.22452	3.03032	1.23173	1.3	0.2	66.0	18.3	0.13
02M4141A	M-Fsn	1	0.00349	15.40181	3.04089	0.94764	1.0	0.5	47.8	18.4	0.08
SO144/3-73DR-1			J = 0.001825								
02M0142A	M-0.4w	1	0.00273	2.99960	0.30768	1.14158	12.2	1.7	58.6	8.0	0.04
02M1142A	M-0.5w	1	0.00193	4.35657	0.33575	1.16849	11.4	1.4	67.2	8.7	0.03
02M2142A	M-0.7w	1	0.00213	9.66839	0.60319	2.03875	11.1	0.7	76.4	15.6	0.03
02M3142A	M-0.9w	1	0.00185	9.56805	0.48602	1.57947	10.7	1.2	74.3	12.6	0.02
02M4142A	M-Fsn	1	0.00137	12.81652	0.38526	1.27393	10.9	1.2	75.8	10.0	0.01
02M0244A	M-SFsn	1	0.01029	27.67298	1.74079	5.90366	11.1	0.4	66.0	45.1	0.03
SO144/3-74DR-1			J = 0.001816								
02M0143A	M-0.4w	1	0.01117	2.62577	0.77704	2.56303	10.8	0.7	43.7	23.3	0.13
02M1143A	M-0.5w	1	0.00295	3.21719	0.71156	2.38352	10.9	0.6	73.2	21.3	0.10
02M2143A	M-0.7w	1	0.00223	6.94428	0.94327	3.10437	10.8	0.6	82.4	28.2	0.06
02M3143A	M-0.9w	1	0.00112	5.94763	0.49342	1.67092	11.1	0.6	83.5	14.8	0.04
02M4143A	M-Fsn	1	0.00134	9.80295	0.41665	1.35320	10.6	1.7	77.4	12.5	0.02
SO144/3-77DR-1			J = 0.001888								

02M0131A	M-0.4w	1	0.00687	4.52477	2.31479	5.40965	7.9	0.2	72.7	25.5	0.22
02M1131A	M-0.5w	1	0.00444	6.05089	2.21486	5.15806	7.9	0.2	79.7	24.4	0.16
02M2131A	M-0.7w	1	0.00957	8.86265	2.46487	5.68213	7.8	0.2	66.8	27.1	0.12
02M3131A	M-0.9w	0	0.00353	4.96569	1.17531	2.26030	6.5	0.3	68.4	12.9	0.10
02M4131A	M-Fsn	0	0.00251	4.75840	0.91682	1.89003	7.0	0.5	71.8	10.1	0.08
SO144/3-77aDR-1			J = 0.00189								
02M0132A	M-0.4w	0	0.00836	2.13770	0.75138	2.16784	9.8	0.5	46.7	11.9	0.15
02M1132A	M-0.5w	1	0.00435	2.41957	0.70135	2.26305	11.0	0.5	63.8	11.1	0.12
02M2132A	M-0.7w	1	0.01009	6.88148	1.46693	4.72758	11.0	0.6	61.3	23.2	0.09
02M3132A	M-0.9w	1	0.00852	8.05556	1.34904	4.34195	10.9	0.3	63.3	21.4	0.07
02M4132A	M-Fsn	1	0.01249	16.78184	2.04173	6.49518	10.8	0.4	63.8	32.4	0.05
SO144/3-78DR-1			J = 0.001892								
02M0133A	M-0.4w	1	0.03859	2.21542	1.01944	4.08613	13.6	0.7	26.4	12.5	0.20
02M1133A	M-0.5w	1	0.02184	2.33382	0.88558	3.40561	13.1	0.8	34.5	10.8	0.16
02M2133A	M-0.7w	1	0.04335	7.12330	1.65419	6.30082	13.0	0.6	33.0	20.2	0.10
02M3133A	M-0.9w	1	0.04280	9.18590	1.50651	5.67821	12.8	0.6	31.0	18.4	0.07
02M4133A	M-Fsn	1	0.10233	31.14945	3.12214	11.66816	12.7	0.6	27.8	38.1	0.04
SO144/3-79DR-1			J = 0.001893								
02M0134A	M-0.4w	1	0.02425	1.84062	1.72216	6.57746	13.0	0.3	47.9	28.8	0.40
02M1134A	M-0.5w	1	0.00464	2.00154	1.30609	4.99036	13.0	0.4	78.4	21.8	0.28
02M2134A	M-0.7w	1	0.00319	4.44834	1.38319	5.26404	13.0	0.5	84.8	23.1	0.13
02M3134A	M-0.9w	1	0.00143	4.92472	0.65612	2.48894	12.9	0.6	85.5	11.0	0.06
02M4134A	M-Fsn	1	0.00226	14.12743	0.91812	3.42147	12.7	1.0	83.6	15.3	0.03
SO144/3-80DR-8			J = 0.001894								
02M0238A	M-0.4w	0	0.02421	2.31249	1.01326	4.10891	13.8	0.7	36.5	18.8	0.19
02M1238A	M-0.5w	1	0.00674	1.89466	0.73255	2.64496	12.3	0.6	57.0	13.6	0.17
02M2238A	M-0.7w	1	0.00767	4.73086	1.31243	4.71502	12.2	0.5	67.5	24.3	0.12
02M3238A	M-1.0w	1	0.00288	5.26054	0.86483	3.06166	12.1	0.7	78.3	16.0	0.07
02M4238A	M-1.5w	1	0.00197	7.64706	0.83829	2.89716	11.8	0.6	83.2	15.5	0.05
02M5238A	M-1.7w	1	0.00076	3.91792	0.40850	1.52237	12.7	1.4	87.1	7.6	0.04
02M6238A	M-Fsn	1	0.00013	1.63143	0.23296	0.92399	13.5	2.5	96.1	4.3	0.06

SO144/3-81DR-1			J = 0.001895								
02M0136A	M-0.4w	1	0.00991	1.74145	1.80934	7.49101	14.1	0.2	71.9	18.6	0.45
02M1136A	M-0.5w	1	0.00332	2.93432	2.15853	8.89441	14.0	0.3	90.1	22.2	0.32
02M2136A	M-0.7w	1	0.00059	0.00000	2.37288	9.69463	13.9	0.3	98.2	24.4	0.00
02M3136A	M-0.9w	1	0.00026	7.26537	1.98122	8.00876	13.8	0.3	99.0	20.4	0.12
02M4136A	M-Fsn	1	0.00072	11.65514	1.39869	5.39835	13.2	1.2	96.2	14.4	0.05
SO144/3-82DR-1			J = 0.001895								
02M0137A	M-0.4w	1	0.00392	2.21444	2.32178	8.41110	12.3	0.2	87.9	18.1	0.45
02M1137A	M-0.5w	1	0.00343	2.65065	2.08418	7.58473	12.4	0.3	88.2	16.3	0.34
02M2137A	M-0.7w	1	0.01829	6.03718	3.18461	11.70498	12.5	0.4	68.4	24.9	0.23
02M3137A	M-0.9w	1	0.01130	5.85416	2.45891	8.98116	12.4	0.2	72.9	19.2	0.18
02M4137A	M-Fsn	1	0.02130	7.92870	2.76433	9.81702	12.1	0.6	60.9	21.6	0.15
SO144/3-83DR-1			J = 0.001895								
02M0237A	M-0.4w	0	0.00733	2.67970	1.29260	3.36481	8.9	0.4	60.8	14.8	0.21
02M1237A	M-0.5w	0	0.00367	2.49168	1.06984	2.70751	8.6	0.6	71.4	12.2	0.18
02M2237A	M-0.7w	1	0.00724	5.79255	2.15481	4.78313	7.6	0.3	69.1	24.6	0.16
02M3237A	M-1.0w	1	0.00315	4.89060	1.43573	3.13832	7.5	0.4	77.1	16.4	0.13
02M4237A	M-1.5w	1	0.00470	5.69481	1.52529	3.18103	7.1	0.4	69.6	17.4	0.12
02M5237A	M-1.7w	1	0.00204	3.19889	0.73192	1.47766	6.9	0.7	71.0	8.4	0.10
02M6237A	M-Fsn	1	0.00242	2.14885	0.53367	1.11047	7.1	0.9	60.8	6.1	0.11
SO144/3-84DR-2			J = 0.001894								
02M0139A	M-0.4w	1	0.01452	2.34780	0.75481	3.06701	13.8	0.6	41.7	20.2	0.14
02M1139A	M-0.5w	1	0.00490	2.99315	0.66425	2.61458	13.4	0.7	64.4	17.8	0.10
02M2139A	M-0.7w	1	0.00218	6.74074	0.97444	3.81172	13.3	0.4	85.5	26.1	0.06
02M3139A	M-0.9w	1	0.00054	6.71221	0.64203	2.40194	12.7	1.3	93.7	17.2	0.04
02M4139A	M-Fsn	1	0.00017	14.09323	0.70359	2.62417	12.7	0.9	98.1	18.8	0.02
SO144/3-Cocos-11			J = 0.001893								
02M0126A	M-0.4w	1	0.00659	1.47504	4.36671	2.39973	1.9	0.1	55.2	17.3	1.27
02M1126A	M-0.5w	1	0.00165	1.59217	5.11935	2.78625	1.9	0.1	85.0	20.3	1.38
02M2126A	M-0.7w	1	0.00197	2.98861	6.83837	3.76225	1.9	0.0	86.5	27.1	0.98
02M3126A	M-0.9w	1	0.00071	2.54950	3.62760	1.99674	1.9	0.2	90.4	14.4	0.61
02M4126A	M-Fsn	1	0.00085	4.38400	5.27881	2.94553	1.9	0.1	92.0	20.9	0.52

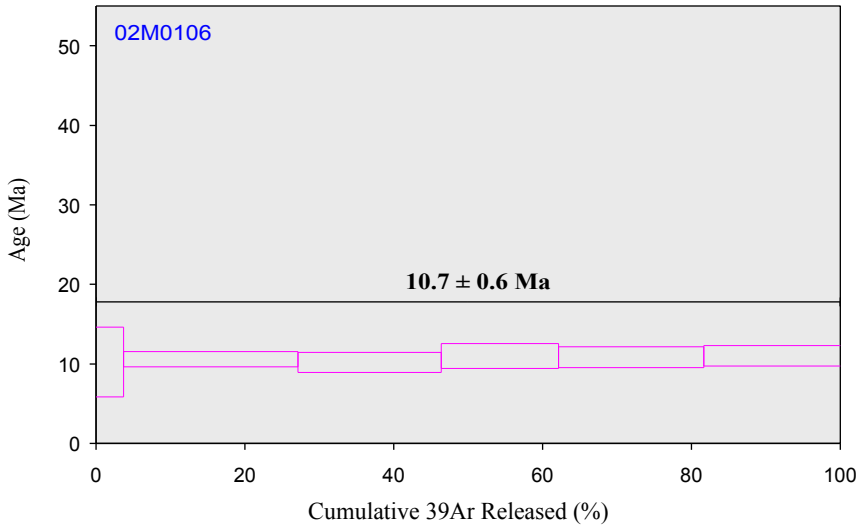
SO144/3-Cocos-13			J = 0.00189								
02M0127A	M-0.4w	1	0.00110	2.28450	4.35242	1.90647	1.5	0.1	85.2	19.3	0.82
02M1127A	M-0.5w	1	0.00045	1.77945	3.33985	1.45531	1.5	0.2	91.5	14.8	0.81
02M2127A	M-0.7w	1	0.00074	4.60634	5.17475	2.23139	1.5	0.1	91.0	22.9	0.48
02M3127A	M-0.9w	1	0.00017	4.45835	3.07991	1.42463	1.6	0.1	96.5	13.6	0.30
02M4127A	M-Fsn	1	0.00169	12.37078	6.63806	2.93304	1.5	0.1	85.3	29.4	0.23
SO144/3-Cocos-15			J = 0.001889								
02M0128A	M-0.4w	1	0.00195	0.76232	7.40978	4.67637	2.2	0.1	88.9	17.8	4.18
02M1128A	M-0.5w	1	0.00054	0.55501	6.10584	3.92778	2.2	0.1	96.0	14.7	4.73
02M2128A	M-0.7w	1	0.00118	0.80777	8.97388	5.67233	2.2	0.0	94.1	21.6	4.78
02M3128A	M-0.9w	1	0.00155	0.55854	6.11689	3.84750	2.1	0.1	89.2	14.7	4.71
02M4128A	M-Fsn	1	0.01267	1.24219	12.99895	8.23728	2.2	0.1	68.7	31.2	4.50
SO144/3-Cocos-24			J = 0.001885								
02M0124B	M-0.4w	1	0.00121	0.54179	6.72698	4.23958	2.1	0.1	92.1	17.1	5.34
02M1124B	M-0.5w	1	0.00035	0.58630	7.66475	4.84974	2.2	0.1	97.8	19.5	5.62
02M2124B	M-0.7w	1	0.00122	0.90108	11.96808	7.48991	2.1	0.0	95.3	30.5	5.71
02M3124B	M-0.9w	1	0.00169	0.47829	6.46104	4.10381	2.2	0.1	89.0	16.5	5.81
02M4124B	M-Fsn	1	0.00528	0.54816	6.45079	4.07694	2.2	0.1	72.3	16.4	5.06
SO144/3-Cocos-26			J = 0.001877								
02M0125A	M-0.4w	1	0.00173	1.95897	2.98595	1.99791	2.3	0.4	79.5	13.5	0.66
02M1125A	M-0.5w	1	0.00043	1.88806	3.56966	2.34961	2.2	0.3	94.7	16.1	0.81
02M2125A	M-0.7w	1	0.00027	3.54982	5.19347	3.48025	2.3	0.1	97.6	23.4	0.63
02M3125A	M-0.9w	1	0.00022	3.91007	3.63775	2.43008	2.3	0.2	97.3	16.4	0.40
02M4125A	M-Fsn	1	0.00174	12.99843	6.77754	4.38085	2.2	0.1	89.4	30.6	0.22
SO144/3-Cocos-33			J = 0.001875								
02M0129A	M-0.4w	1	0.01547	1.25491	0.90981	0.62562	2.3	0.5	12.0	9.3	0.31
02M1129A	M-0.7w	1	0.00611	1.54599	1.30195	0.87315	2.3	0.4	32.6	13.3	0.36
02M2129A	M-0.9w	1	0.00630	3.22351	2.28771	1.47573	2.2	0.3	44.2	23.4	0.31
02M3129A	M-0.9w	1	0.00261	3.03450	1.55184	0.99327	2.2	0.3	56.2	15.9	0.22
02M4129A	M-Fsn	1	0.00578	12.45174	3.70509	2.45572	2.2	0.2	58.9	38.0	0.13

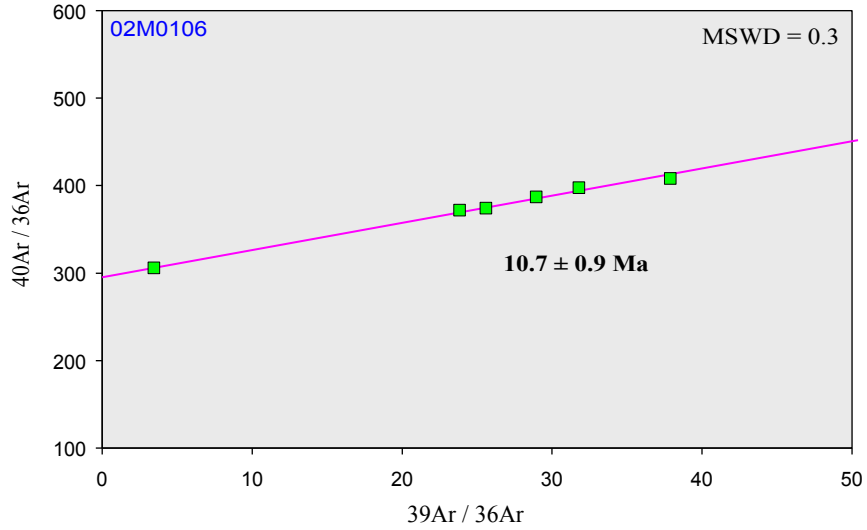
SO144/3-Cocos-35			J = 0.001869								
02M0130A	M-0.4w	1	0.00391	3.34667	1.26702	0.89348	2.4	0.3	43.6	30.6	0.16
02M1130A	M-0.5w	1	0.00064	3.96405	1.13849	0.71872	2.1	0.5	79.1	27.5	0.12
02M2130A	M-0.7w	1	0.00029	5.96209	1.03226	0.65101	2.1	0.5	88.4	25.0	0.07
02M3130A	M-0.9w	1	0.00006	3.51968	0.32000	0.20953	2.2	1.5	91.9	7.7	0.04
02M4130A	M-Fsn	1	0.00026	5.85727	0.37619	0.22802	2.0	1.4	74.5	9.1	0.03

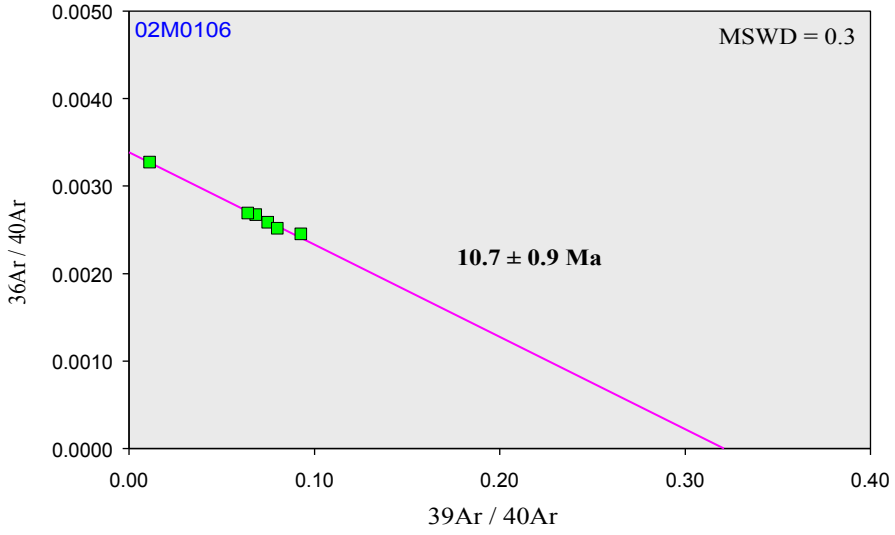
Anlage 3

Plateau, isochron and inverse isochron plots

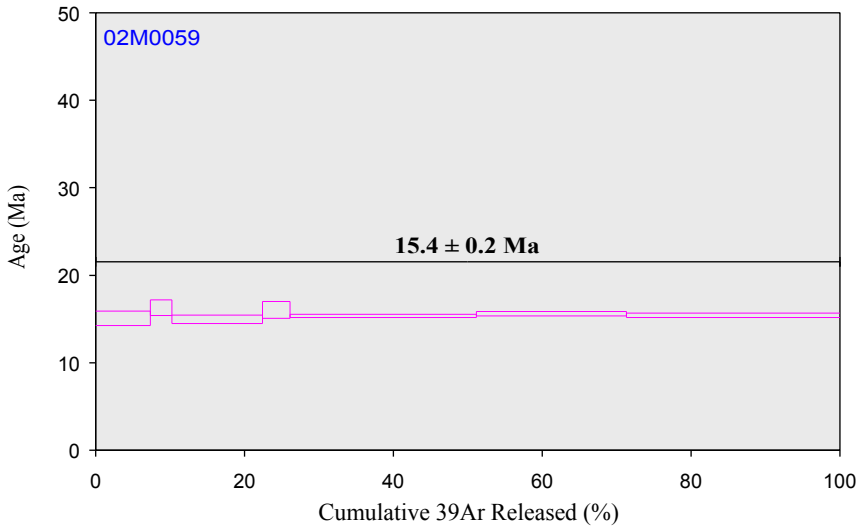
Malpelo Ridge
SO144/3-3TVG-4 (whole rock)

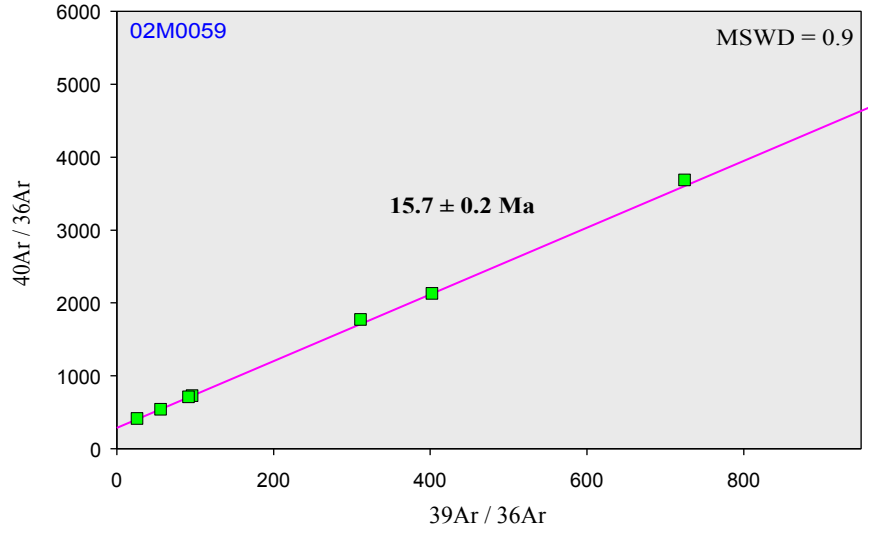


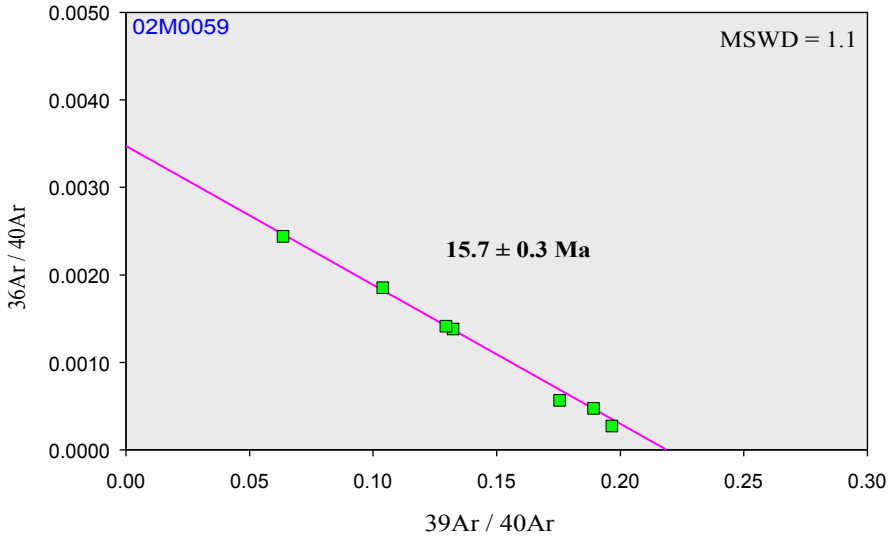




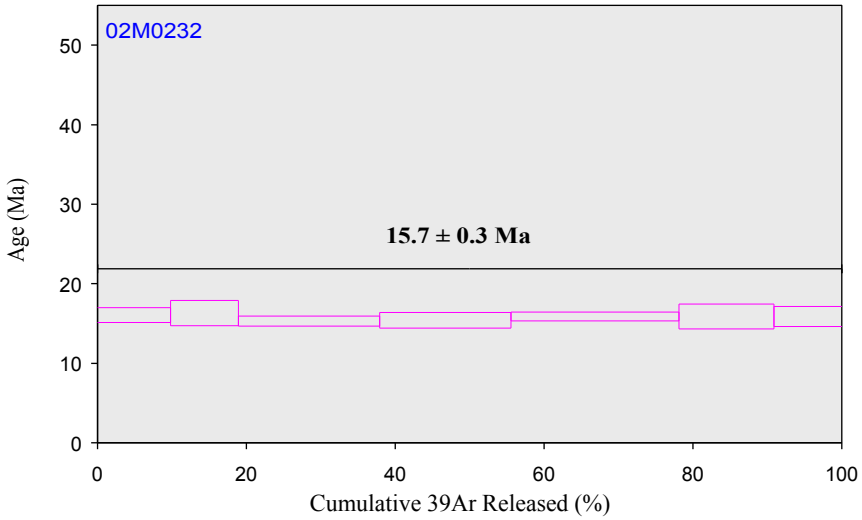
Malpelo Ridge
SO144/3-5DR-1 (whole rock)

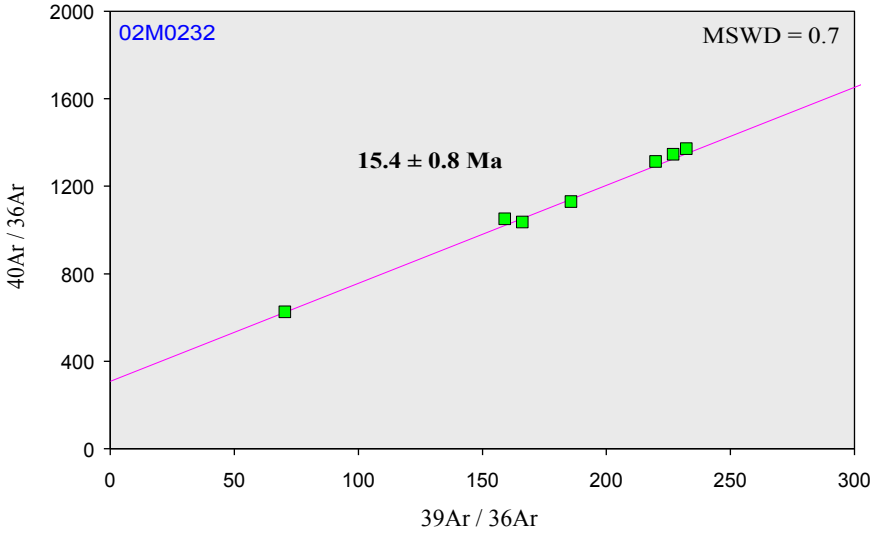


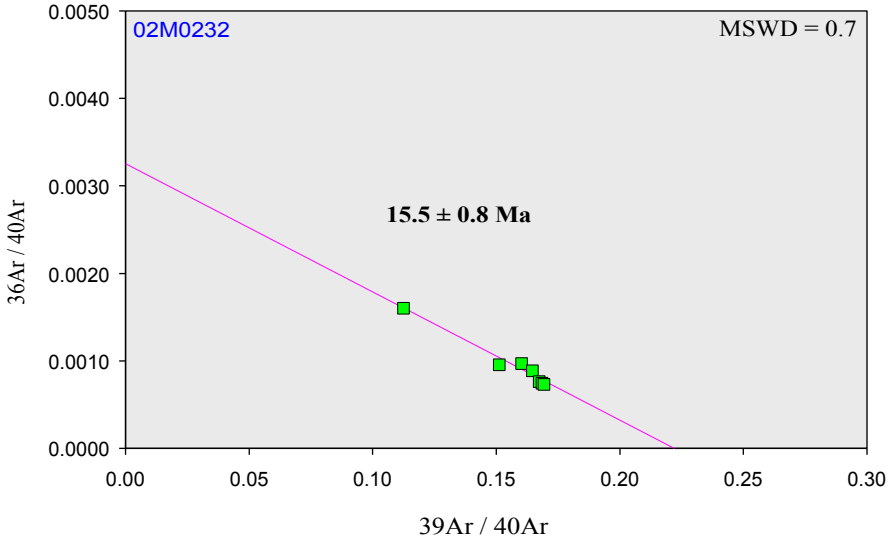




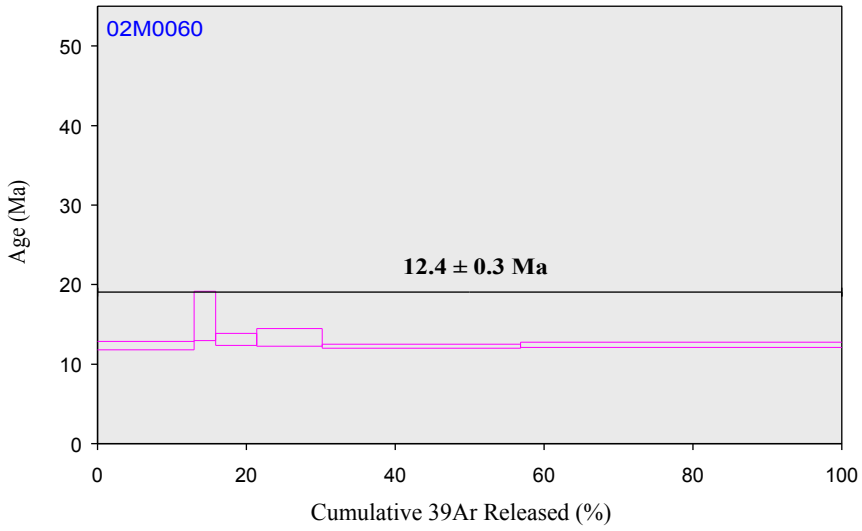
Malpelo Ridge
SO144/3-5DR-1 (whole rock)

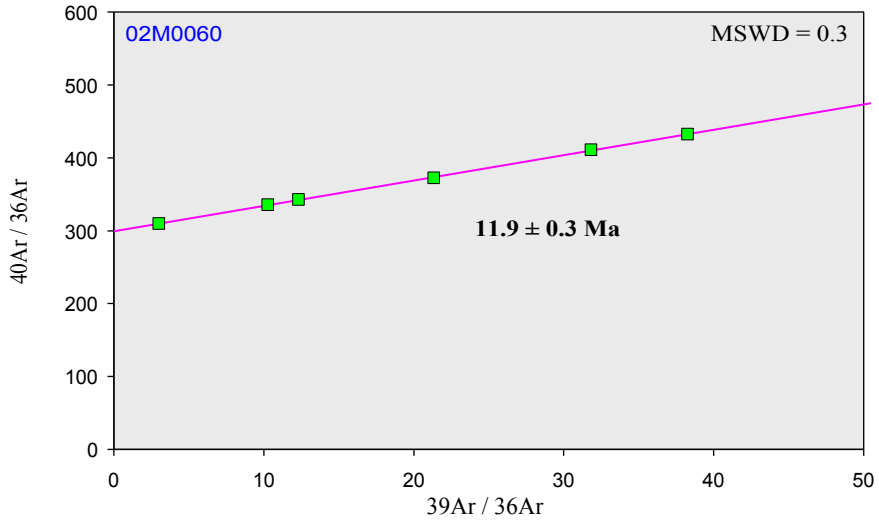


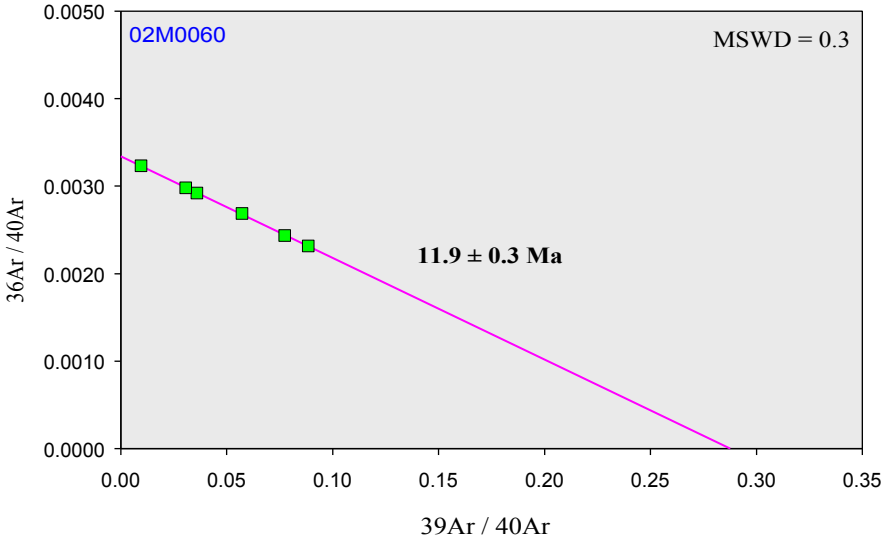




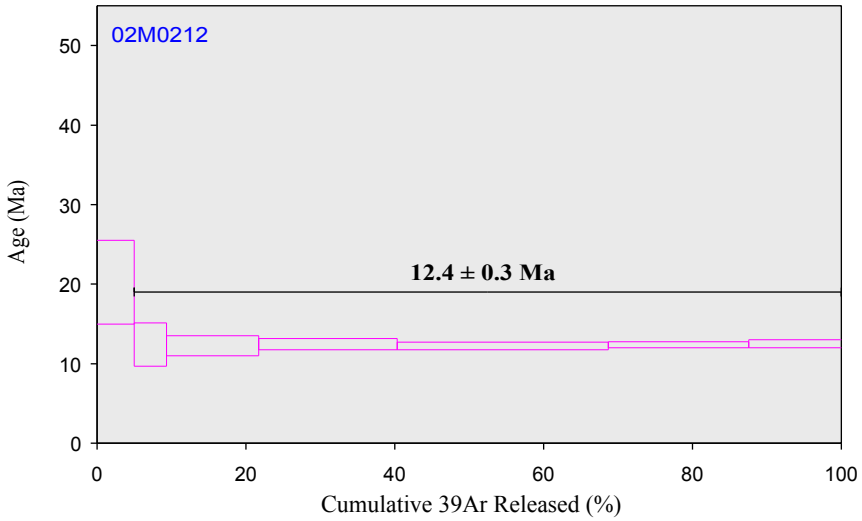
Malpelo Ridge
SO144/3-6DR-1 (whole rock)

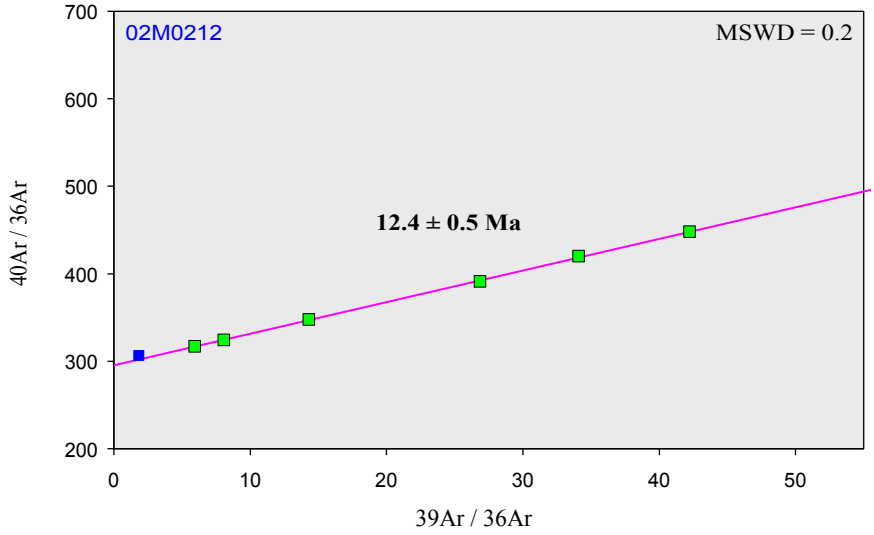


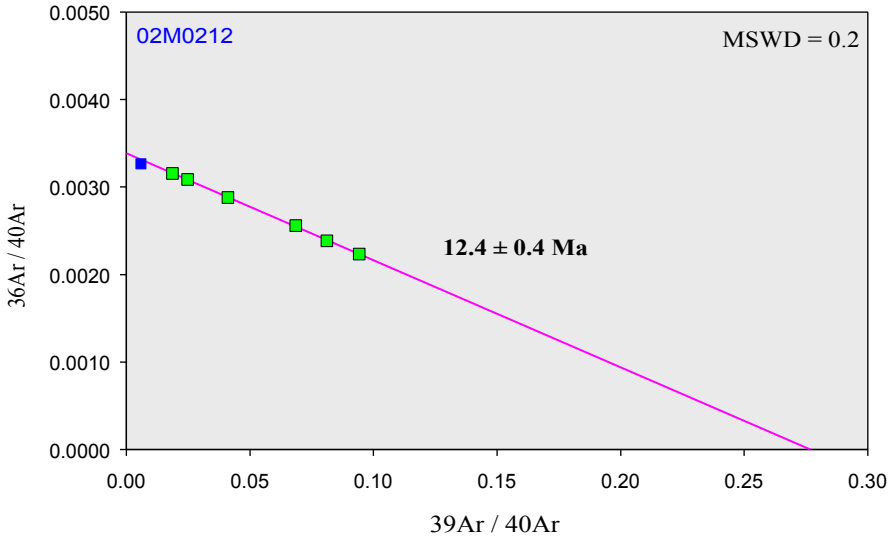




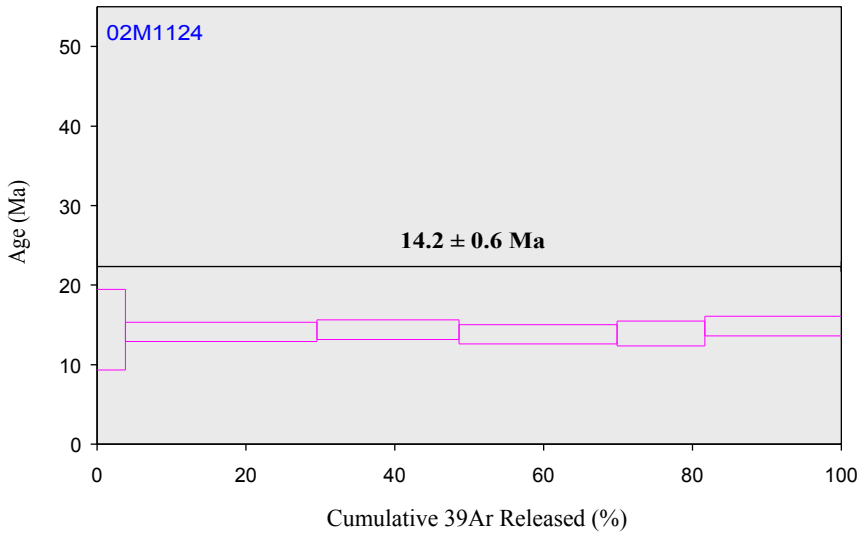
Malpelo Ridge
SO144/3-6DR-1 (whole rock)

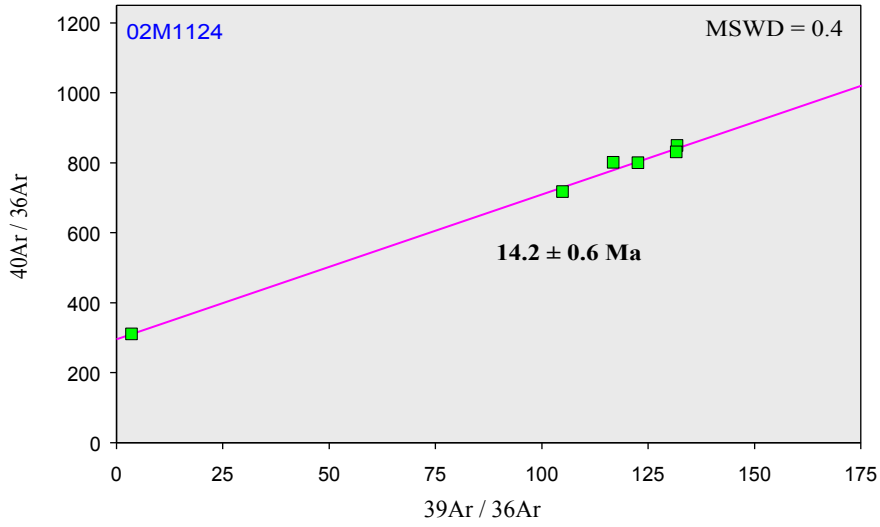


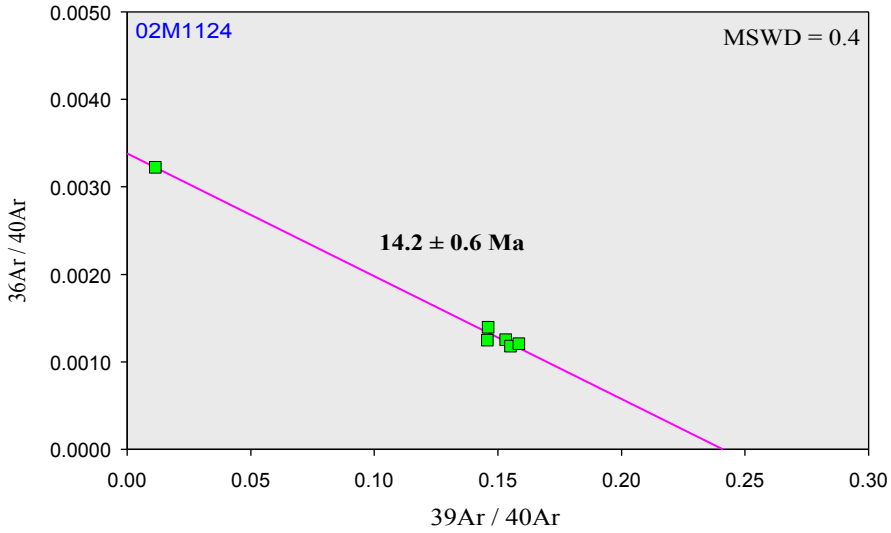




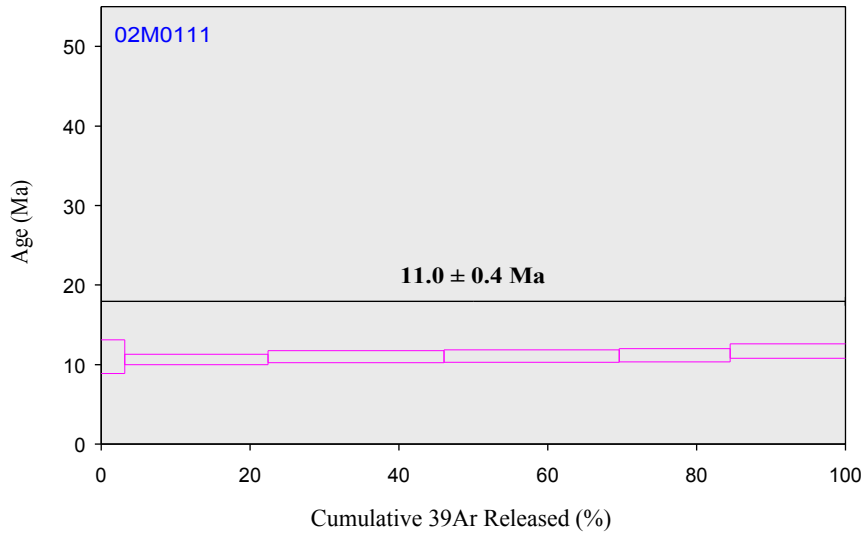
Malpelo Ridge
SO144/3-7DR-1 (whole rock)

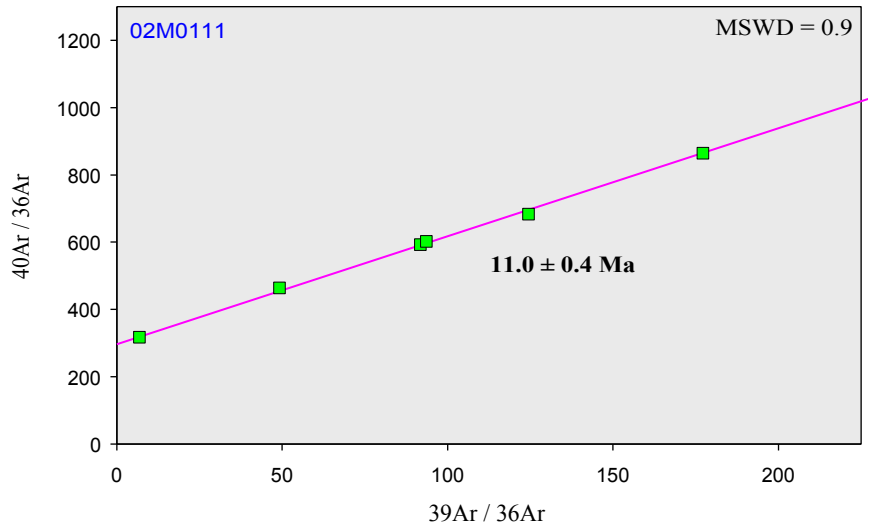


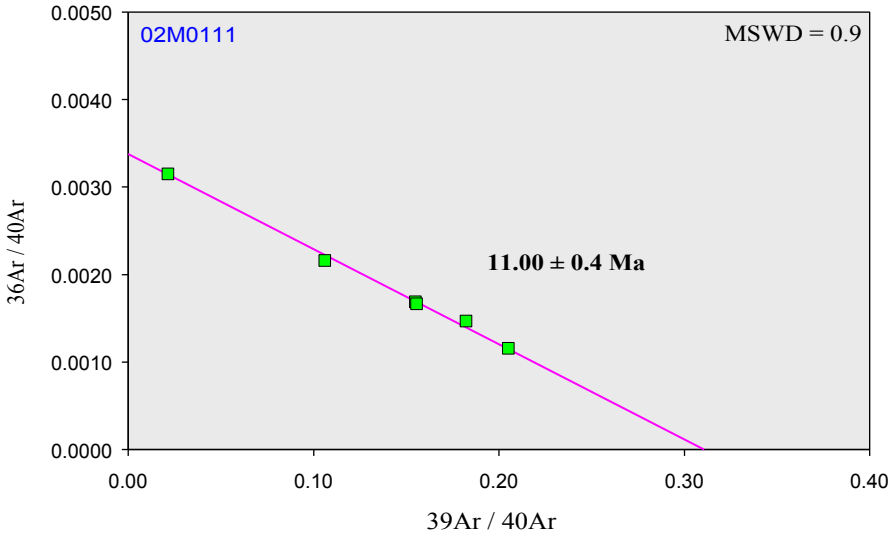




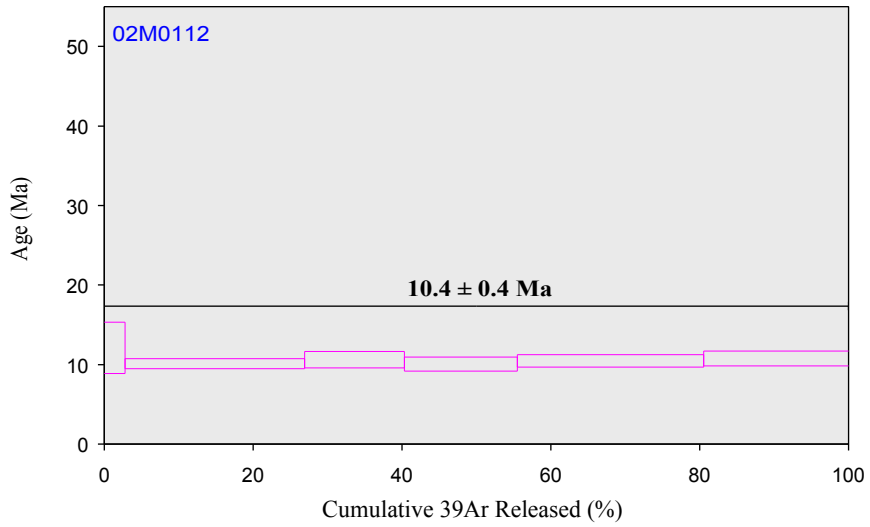
Carnegie Ridge
SO144/3-11aDR-21 (whole rock)

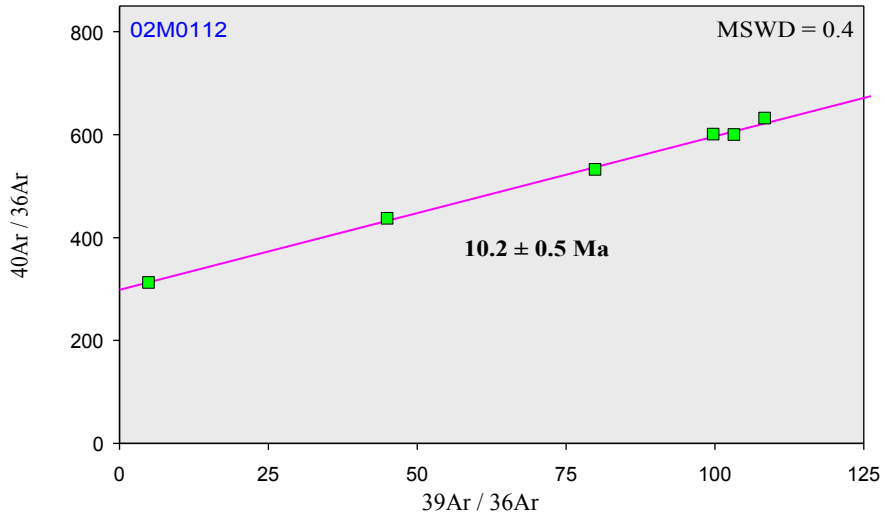


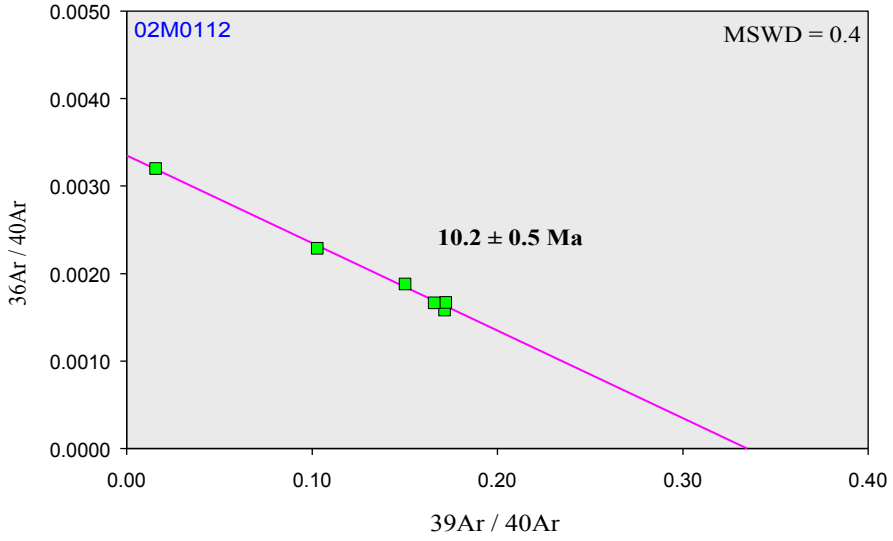




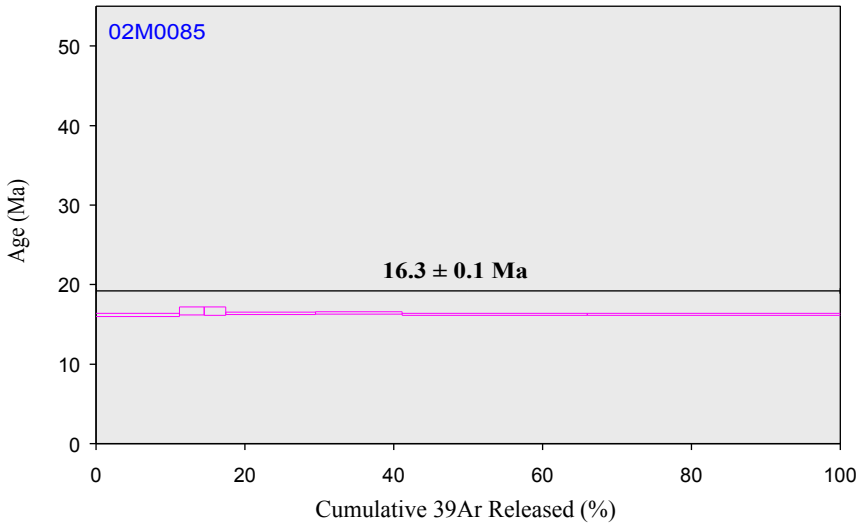
Carnegie Ridge
SO144/3-13DR-1 (whole rock)

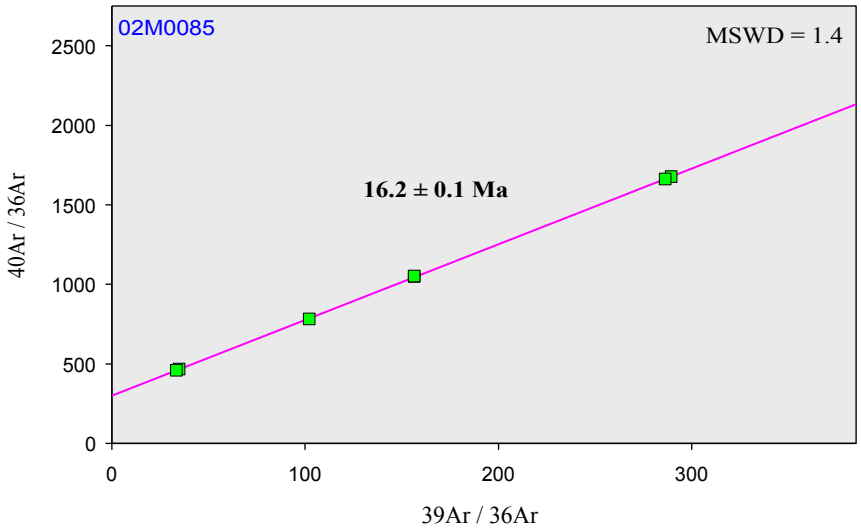


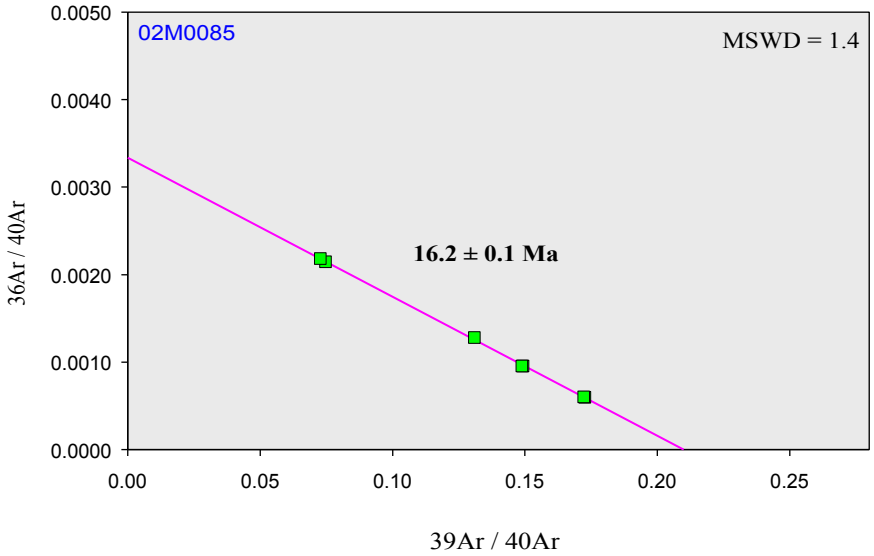




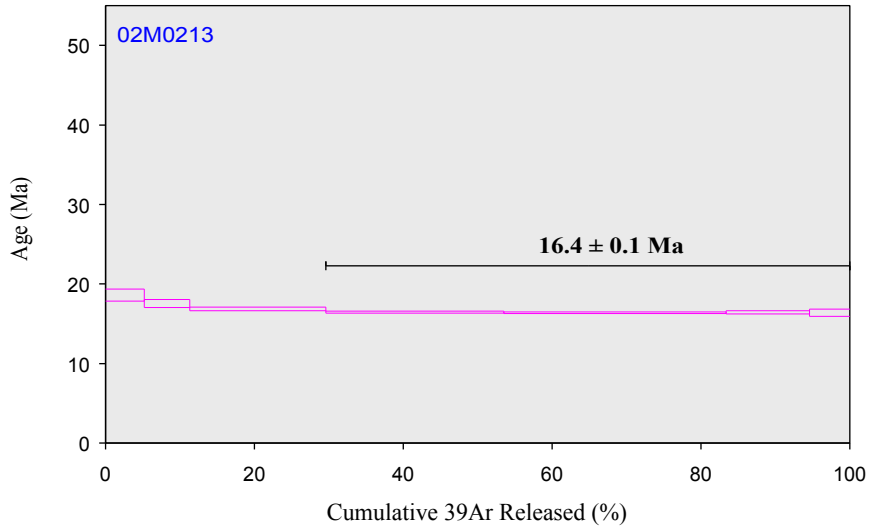
Carnegie Ridge
SO144/3-17TVG-1 (whole rock)

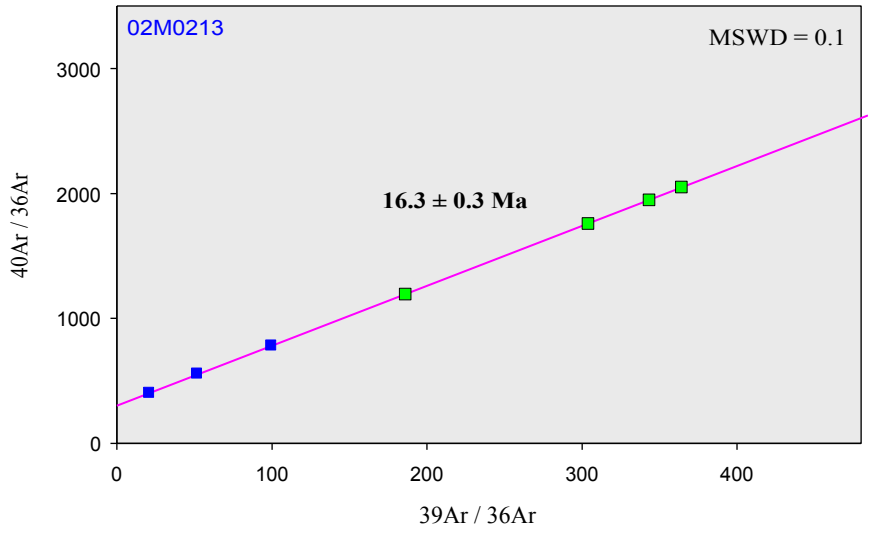


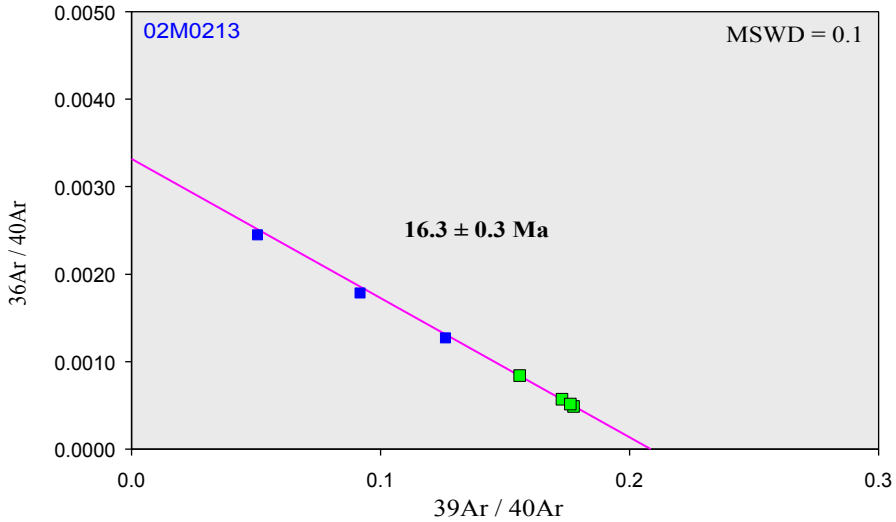




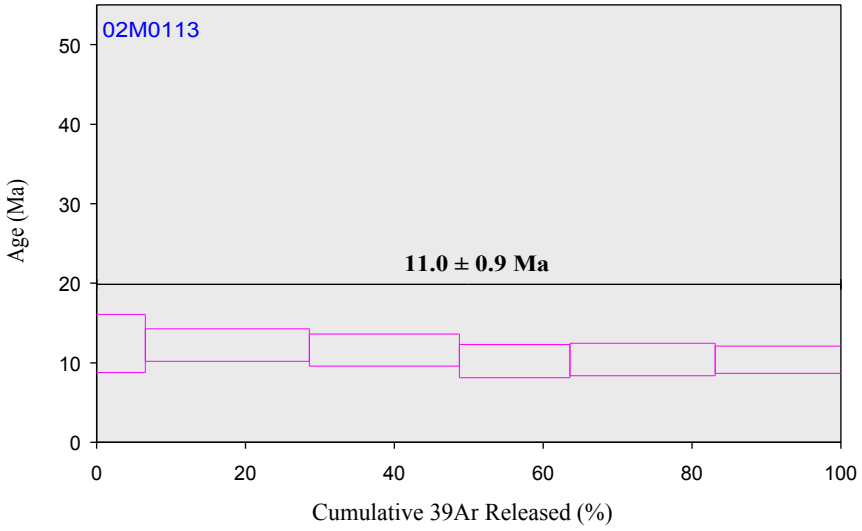
Carnegie Ridge
SO144/3-17TVG-1 (whole rock)

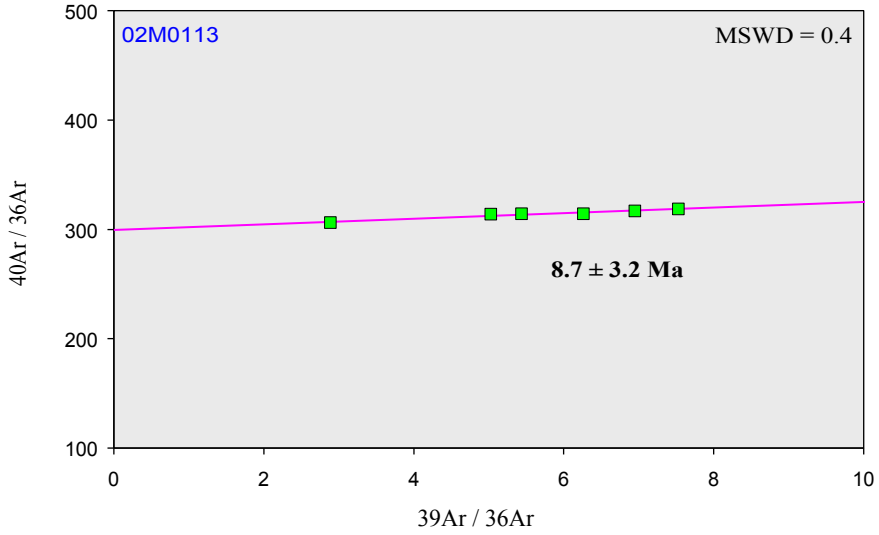


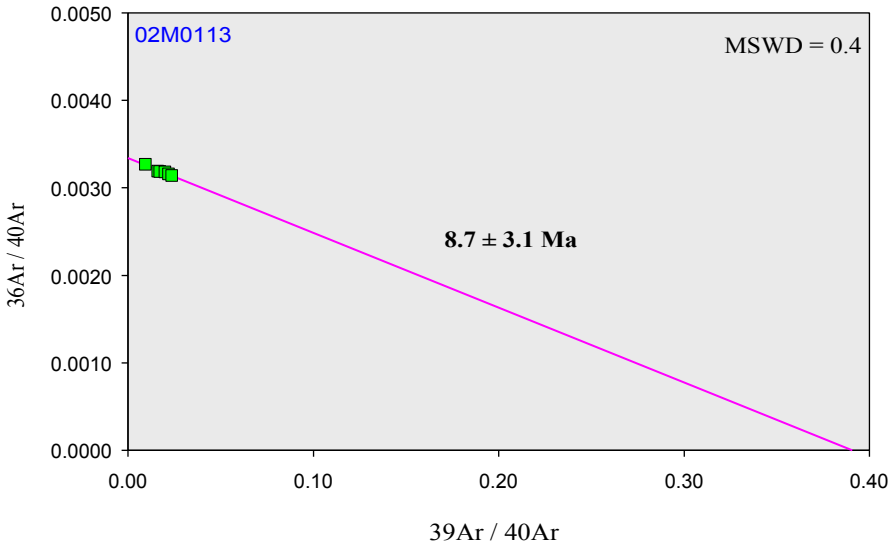




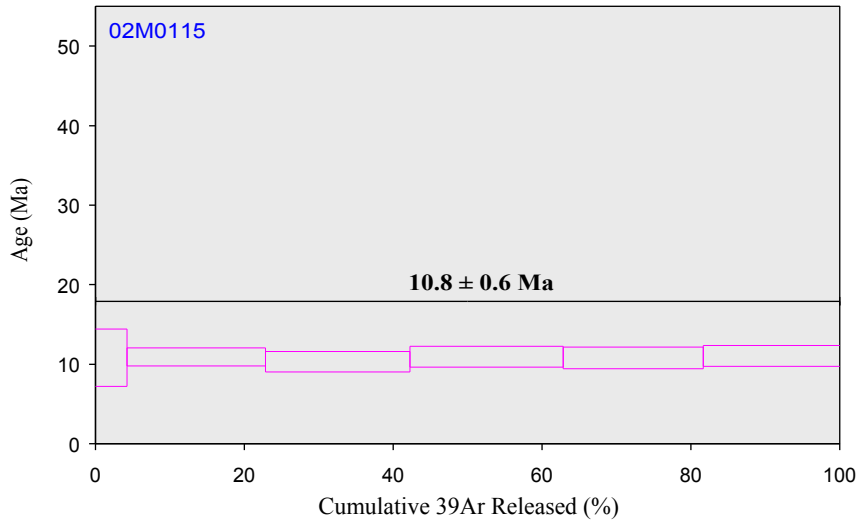
Carnegie Ridge
SO144/3-18DR-1 (whole rock)

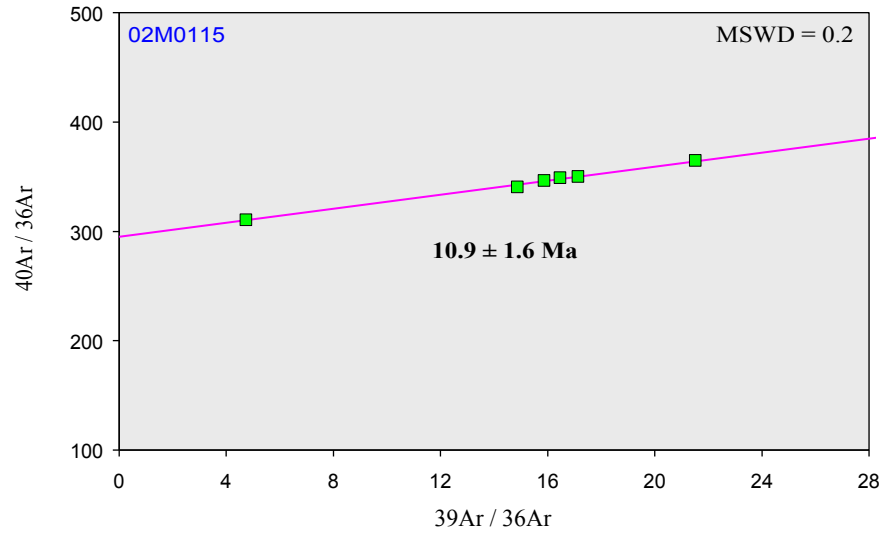


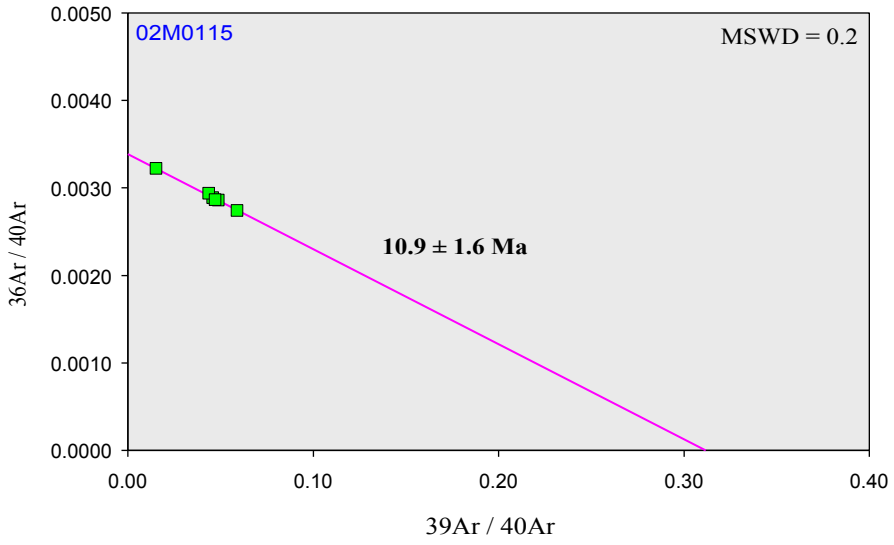




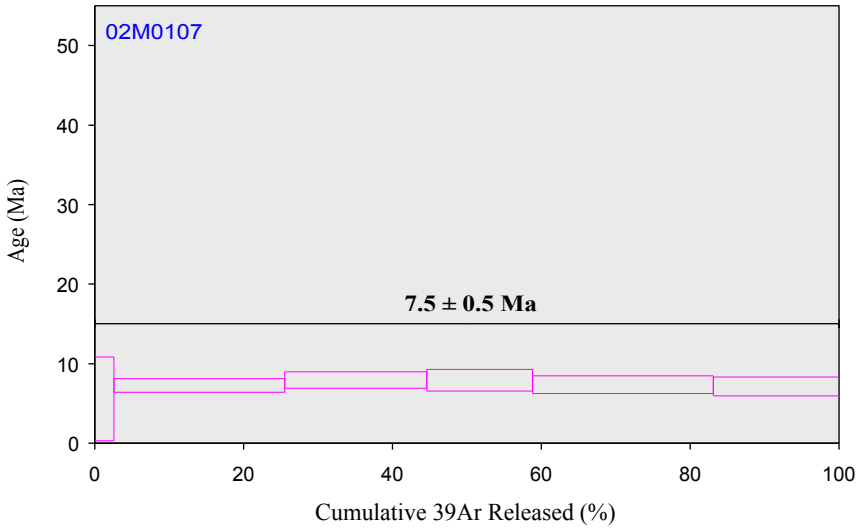
Carnegie Ridge
SO144/3-19DR-5 (whole Rock)

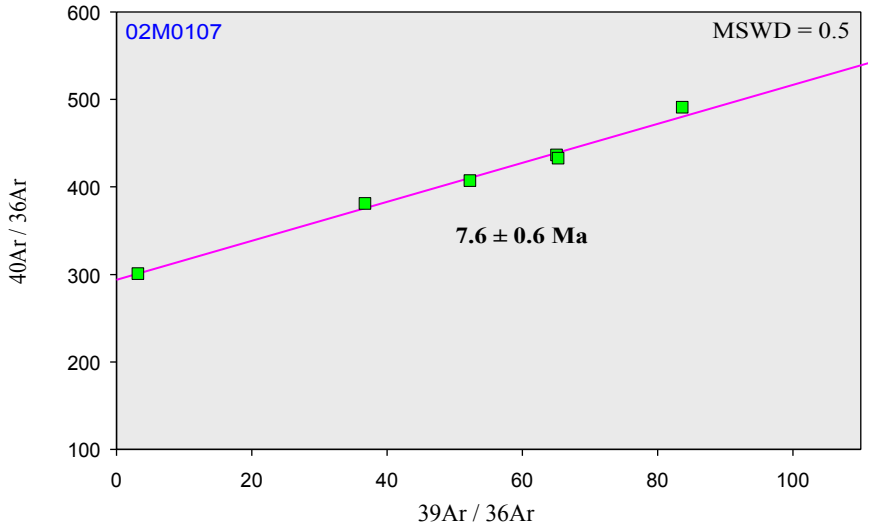


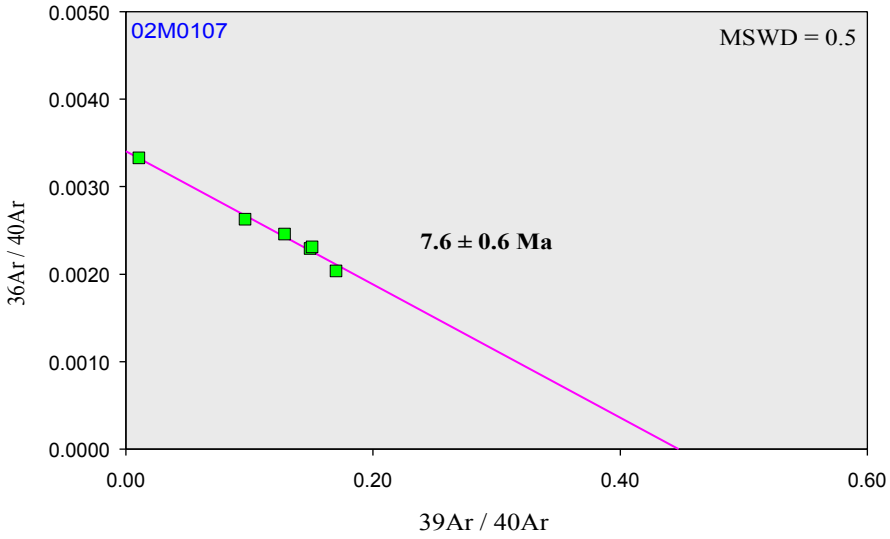




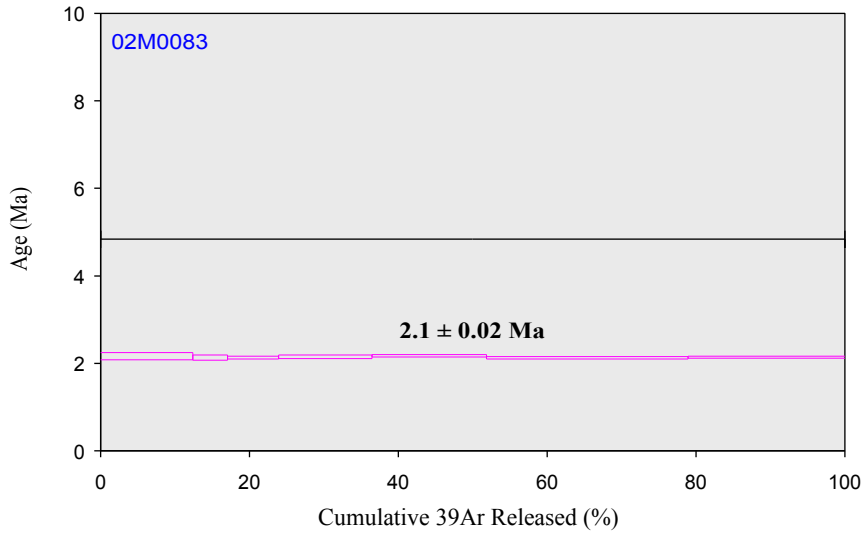
Carnegie Ridge
SO144/3-26TVG-1 (whole rock)

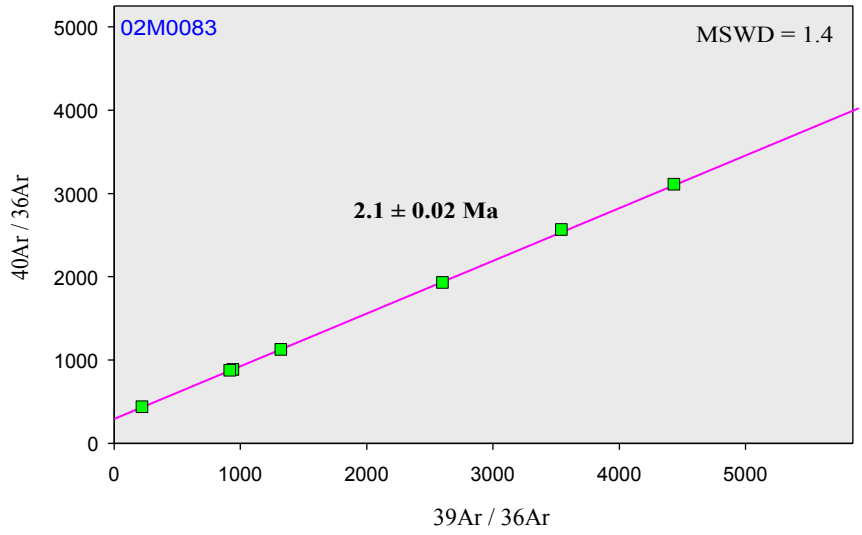


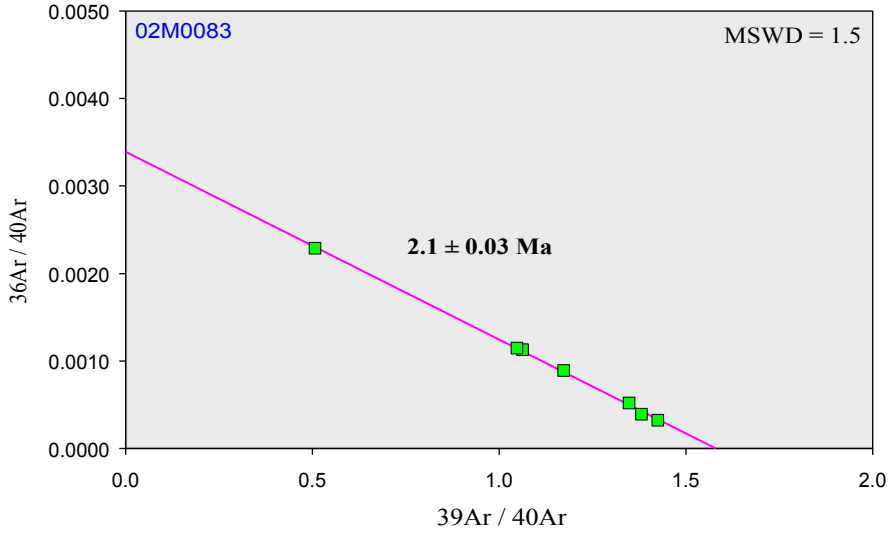




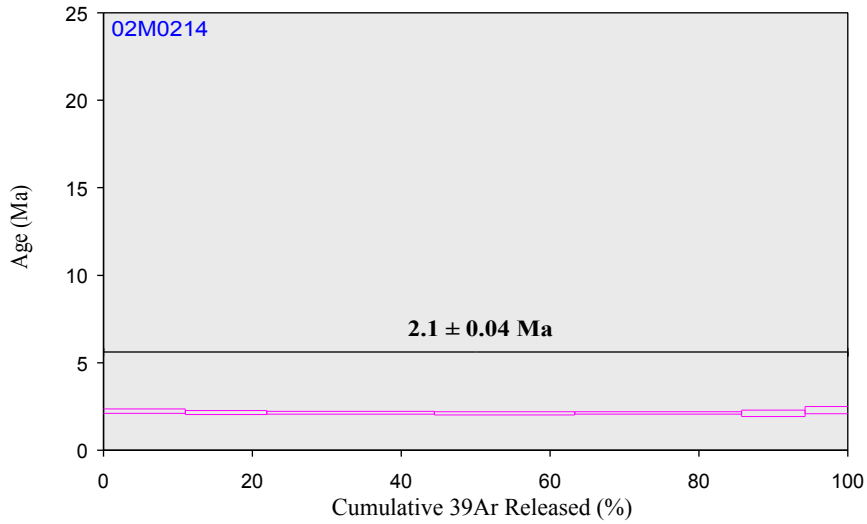
Carnegie Ridge
SO144/3-28DR-1 (whole rock)

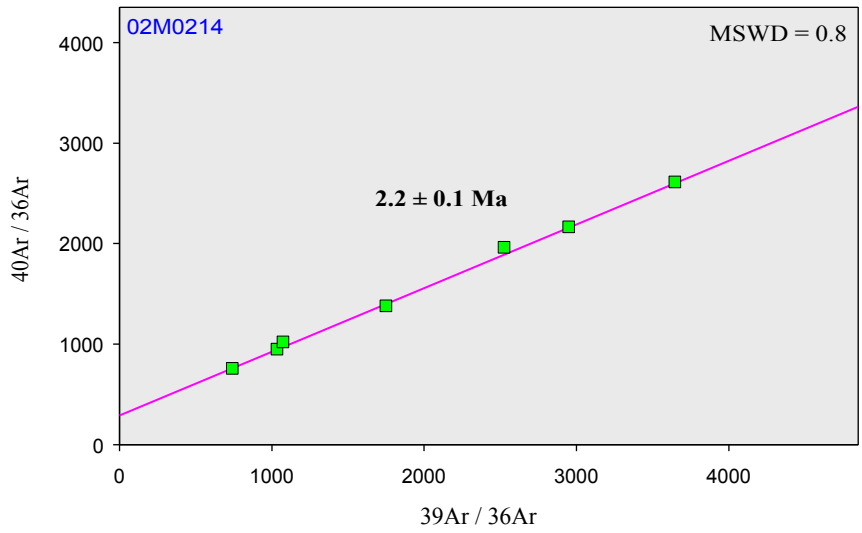


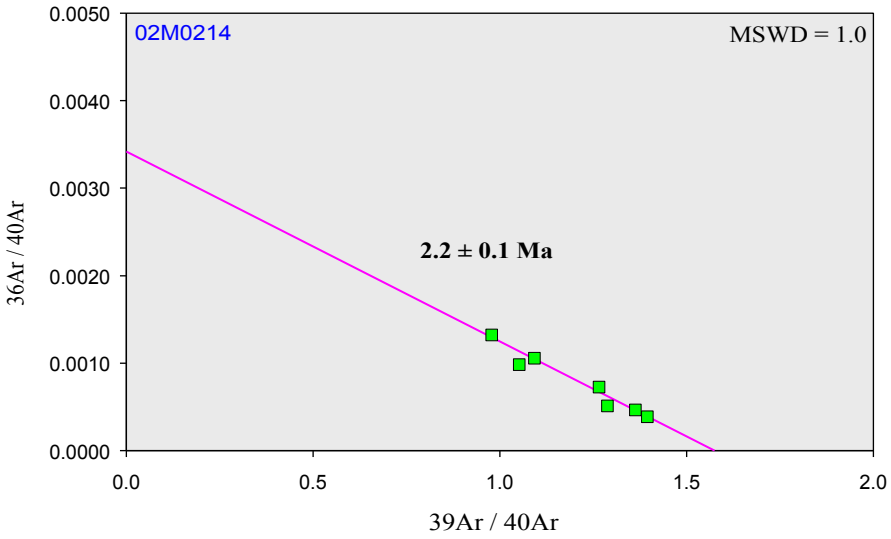




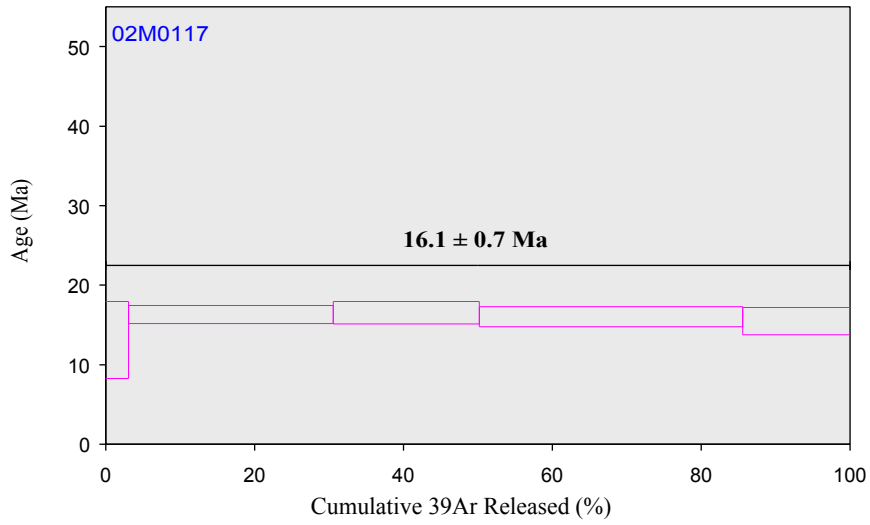
Carnegie Ridge
SO144/3-28DR-1 (whole rock)

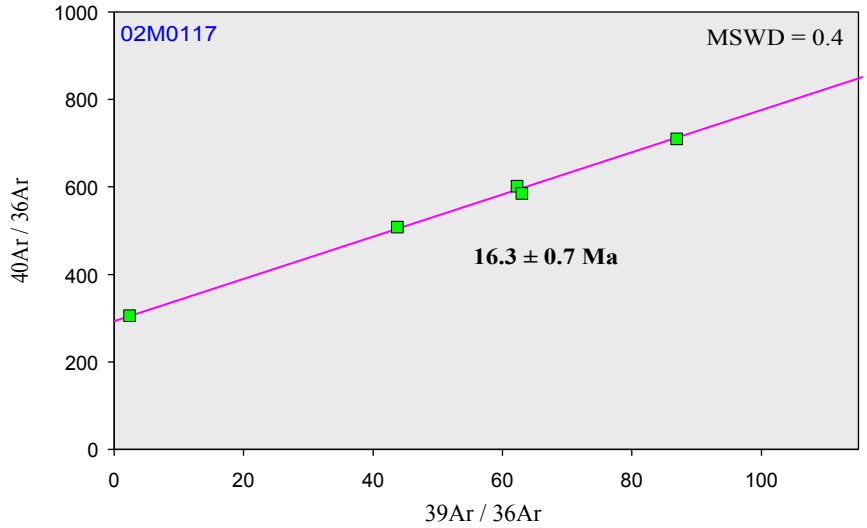


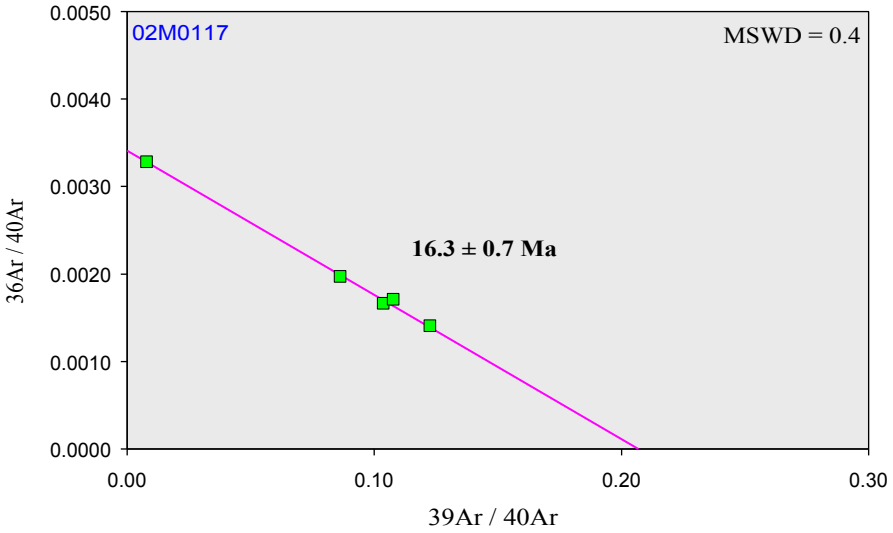




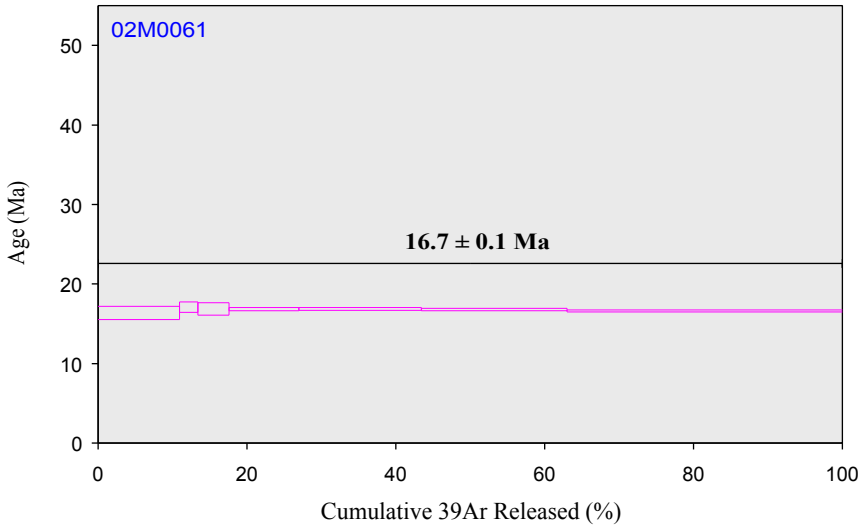
Fisher Ridge
SO144/3-85DR-1 (whole rock)

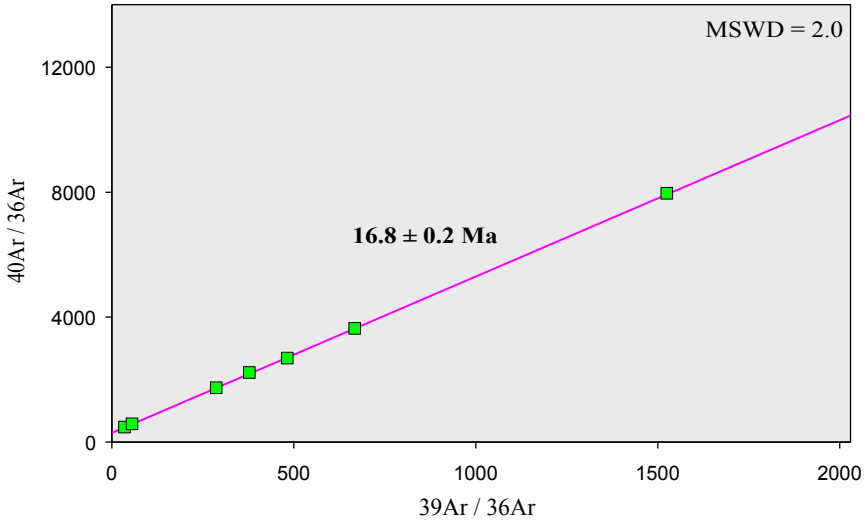


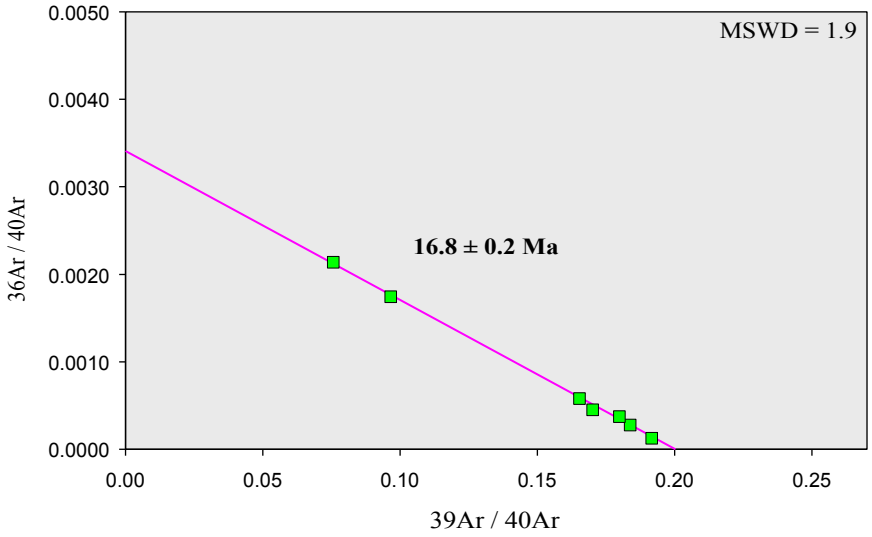




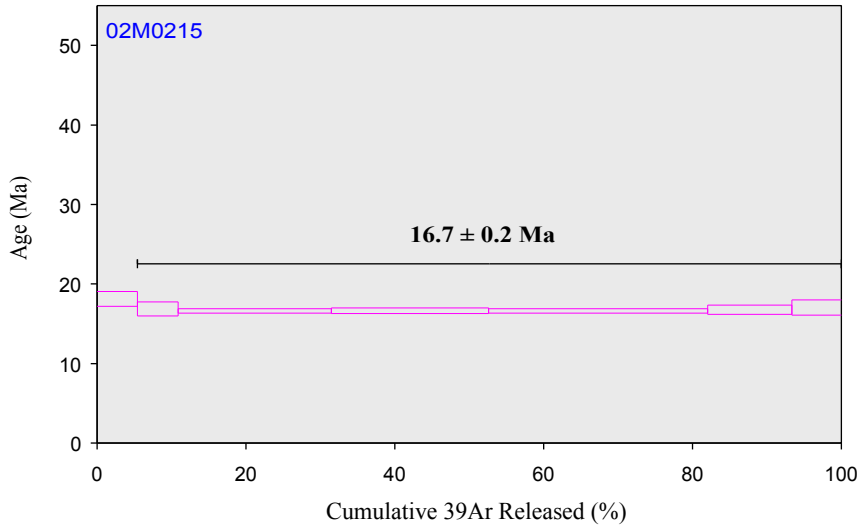
Coiba Ridge
SO144/3-89aDR-1 (whole rock)

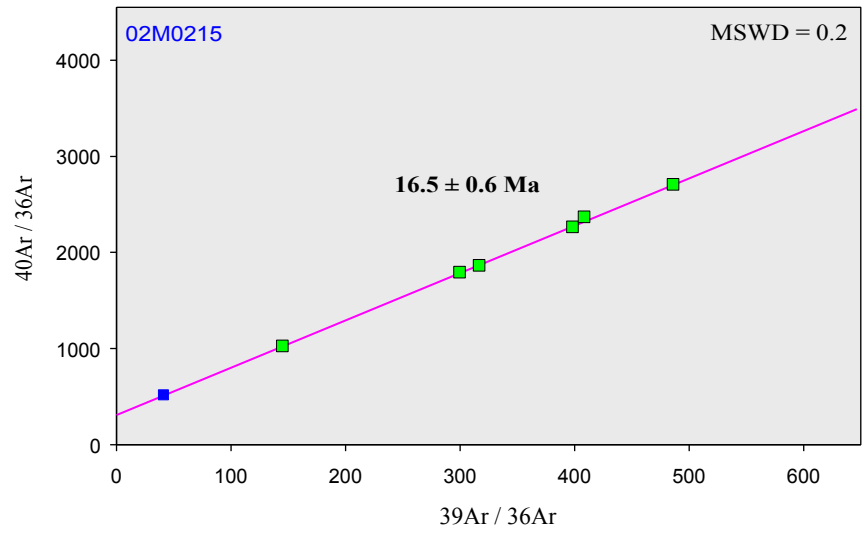


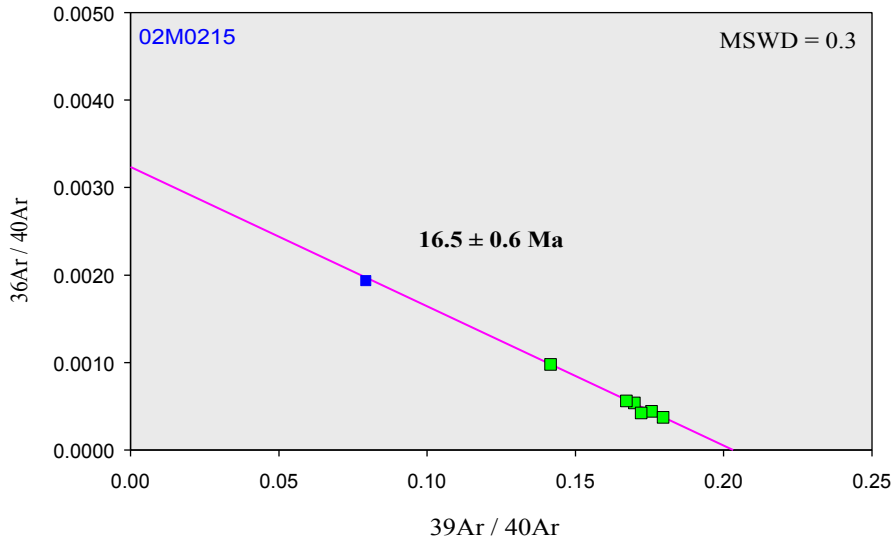




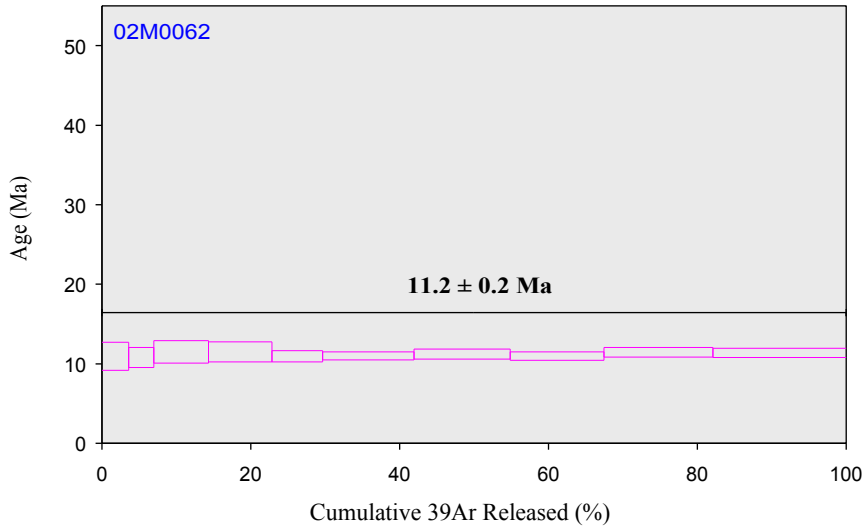
Coiba Ridge
SO144/3-89aDR-1 (whole rock)

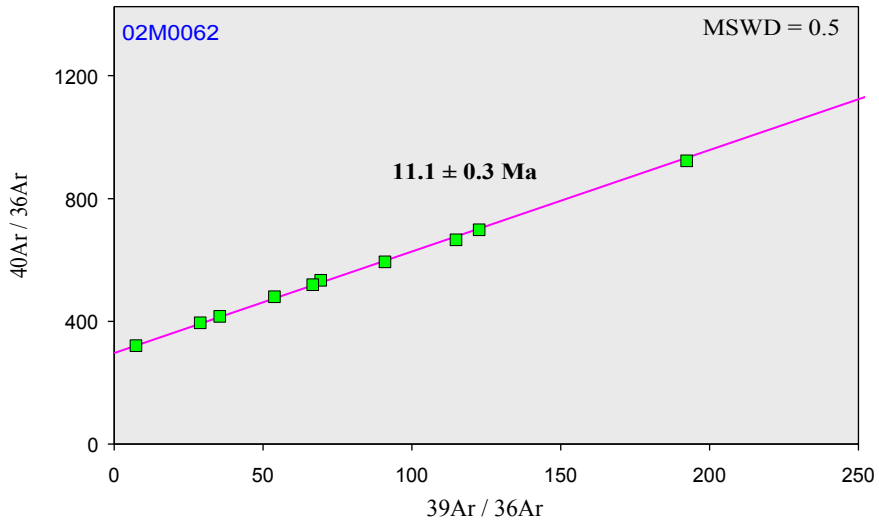


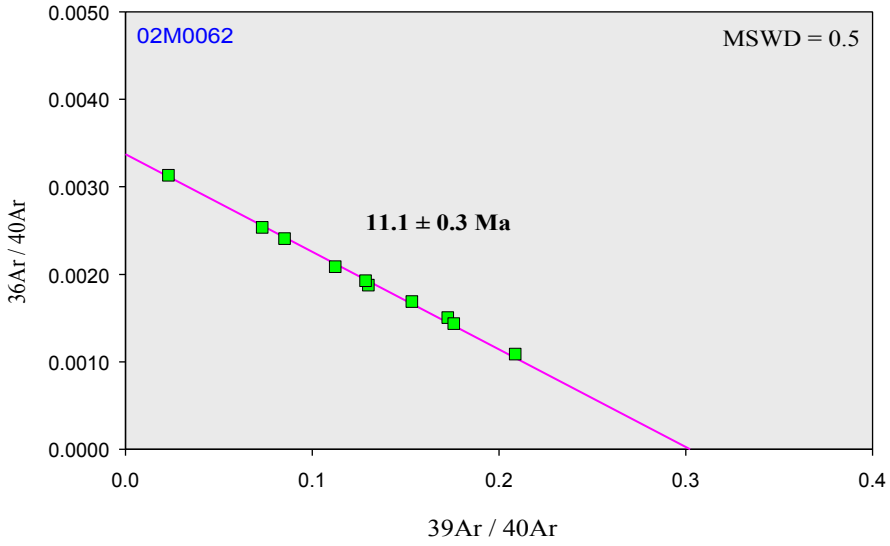




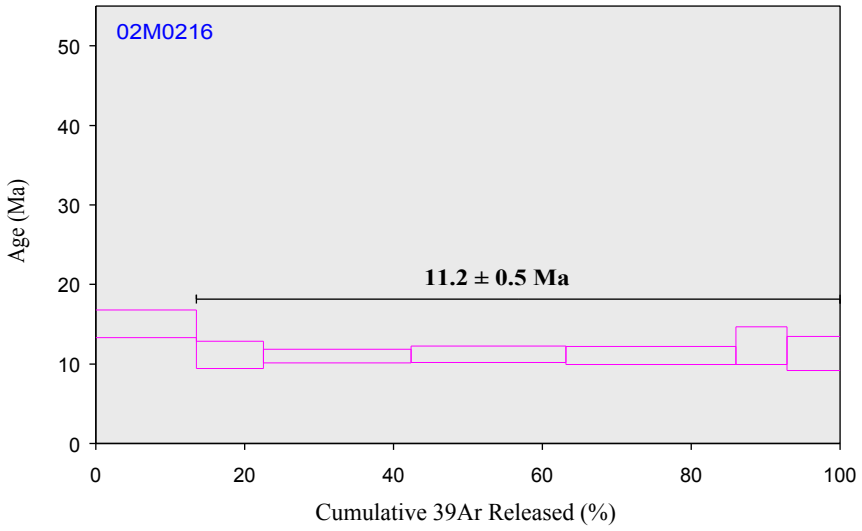
Coiba Ridge
SO144/3-90DR-1 (whole rock)

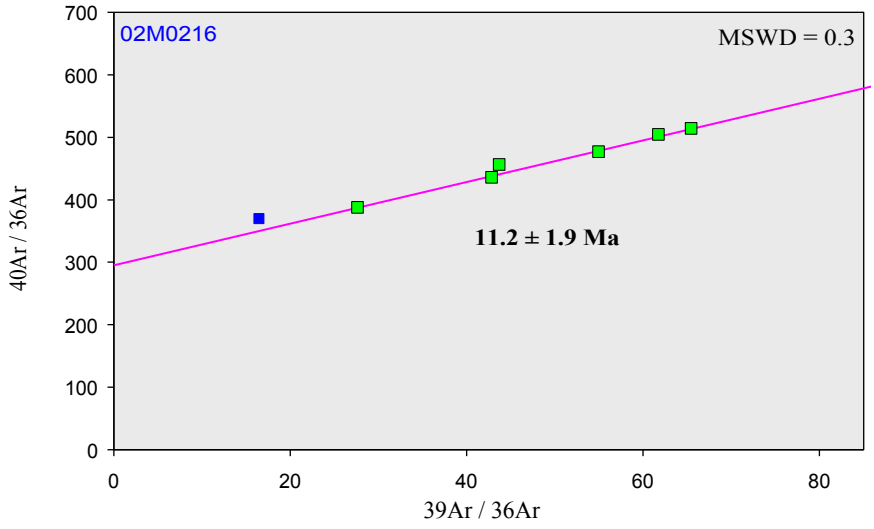


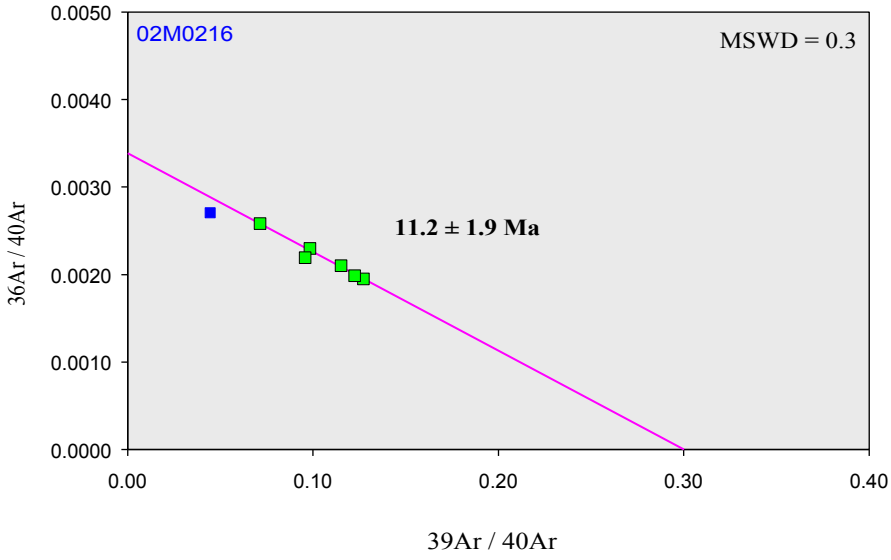




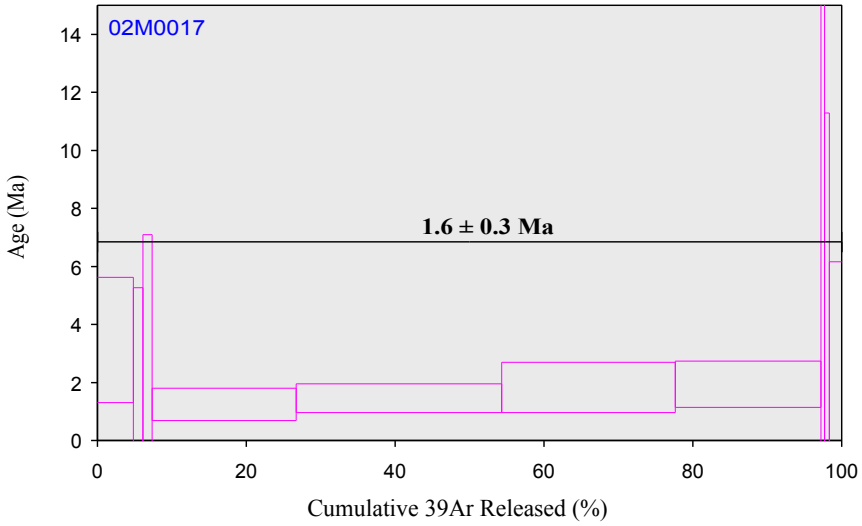
Coiba Ridge
SO144/3-90DR-1 (whole rock)

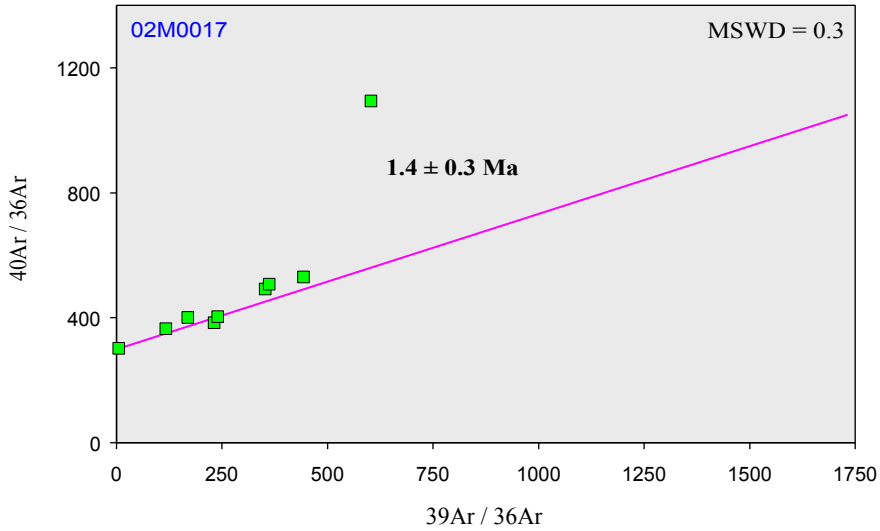


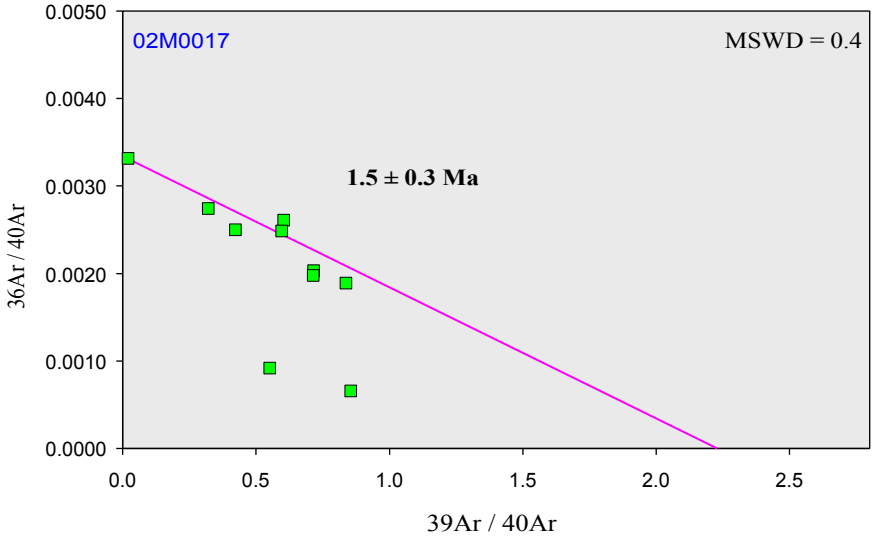




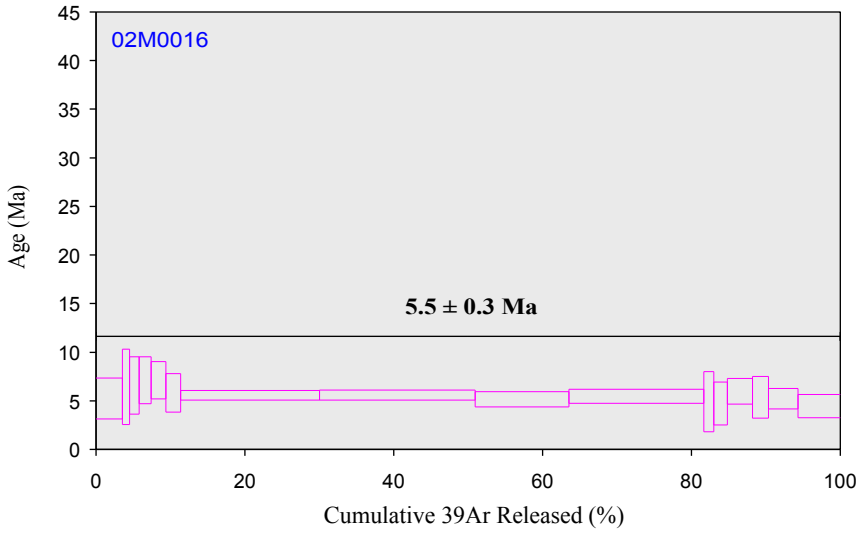
Cocos Ridge
SO144/3-32DR-1 (whole rock)

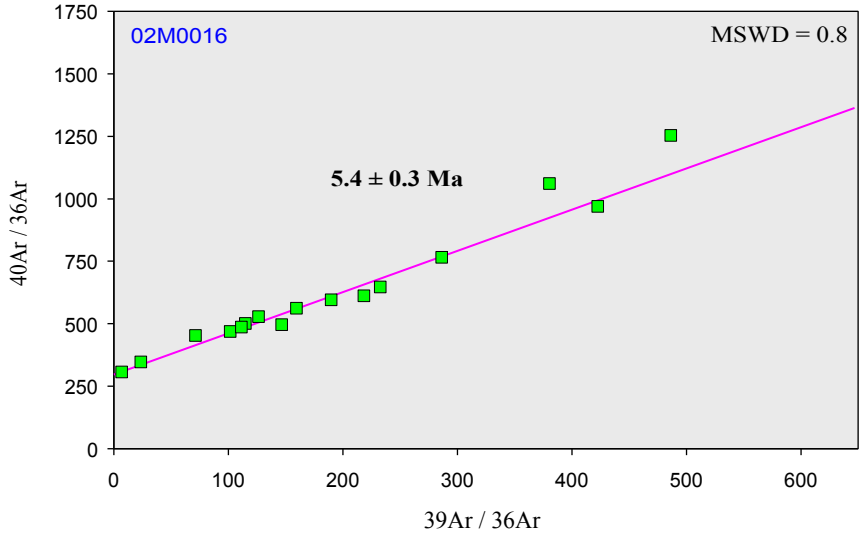


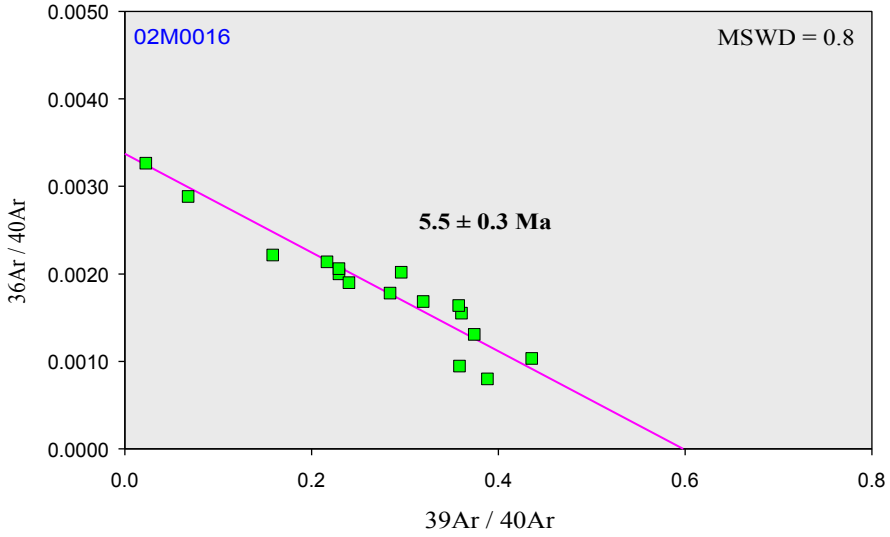




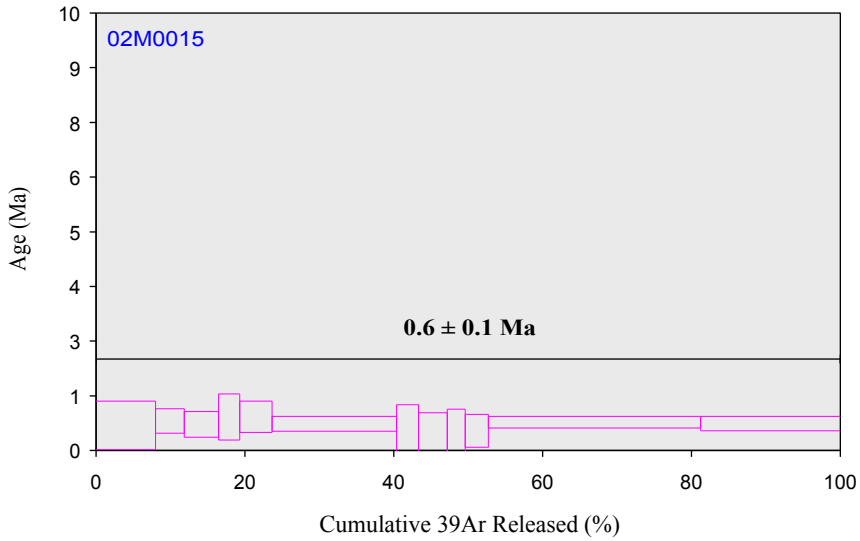
Cocos Ridge
SO144/3-33DR-1 (whole rock)

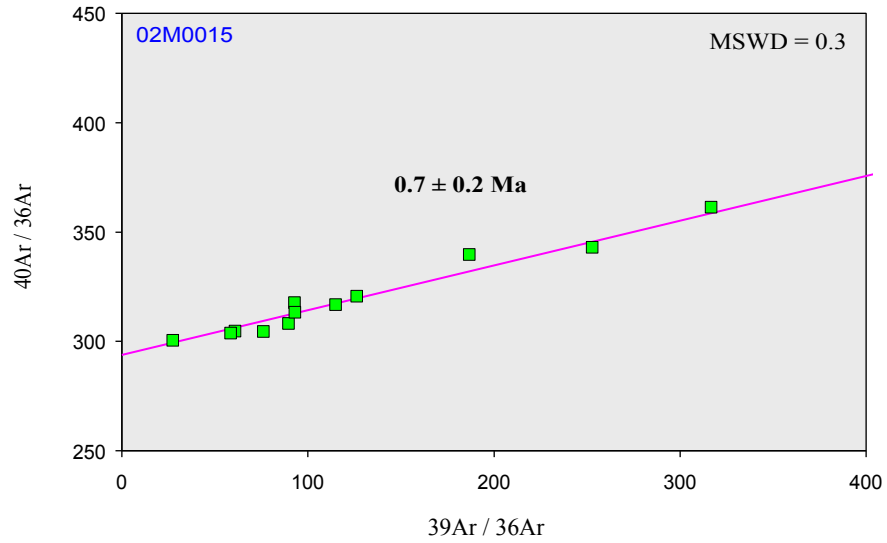


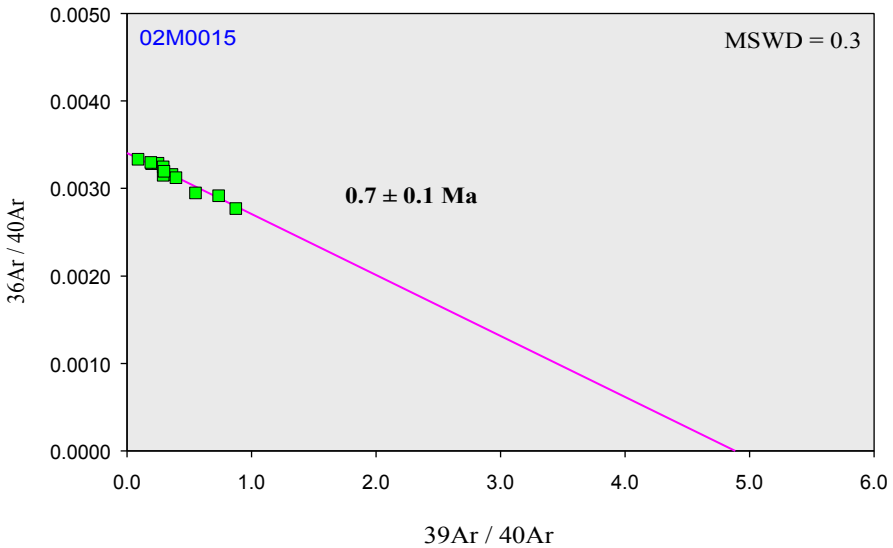




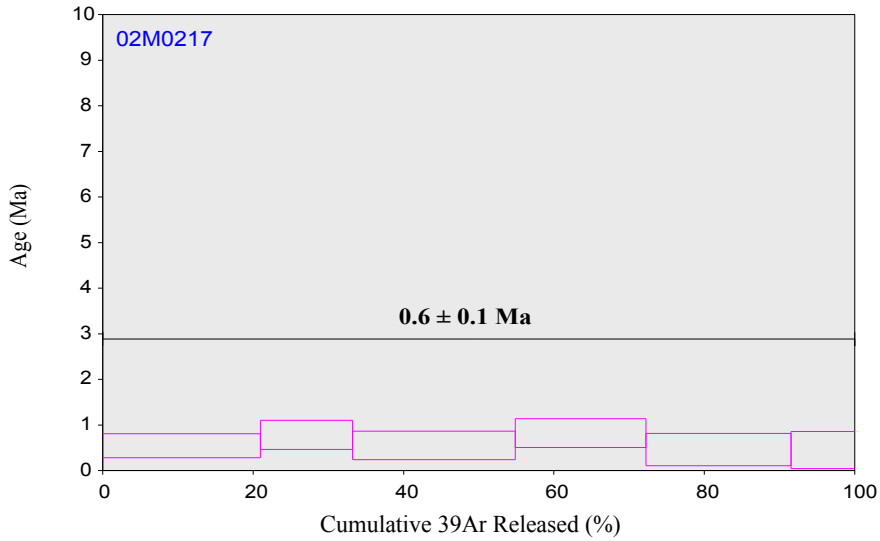
Cocos Ridge
SO144/3-38DR-12 (whole rock)

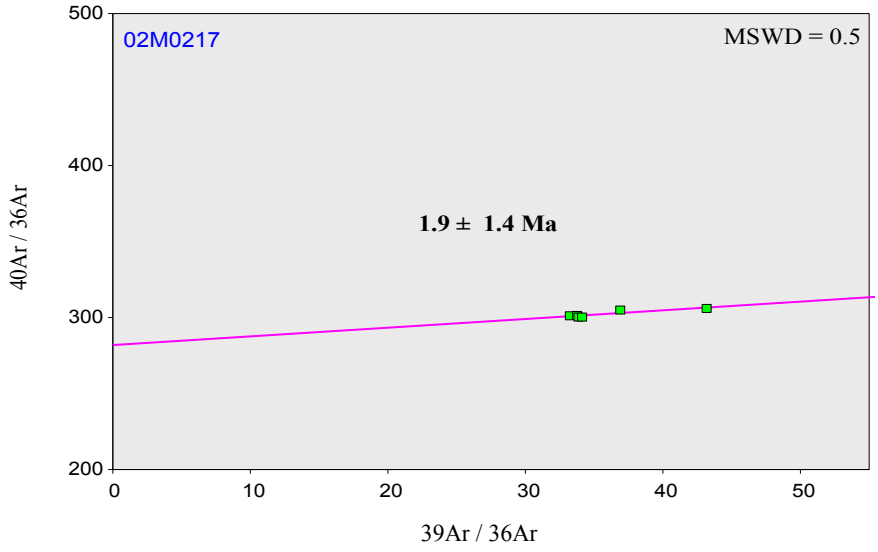


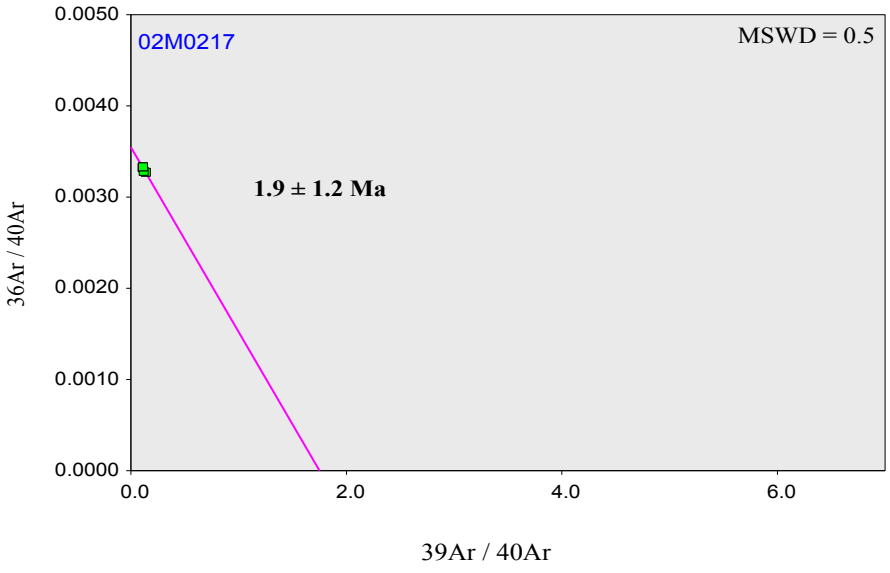




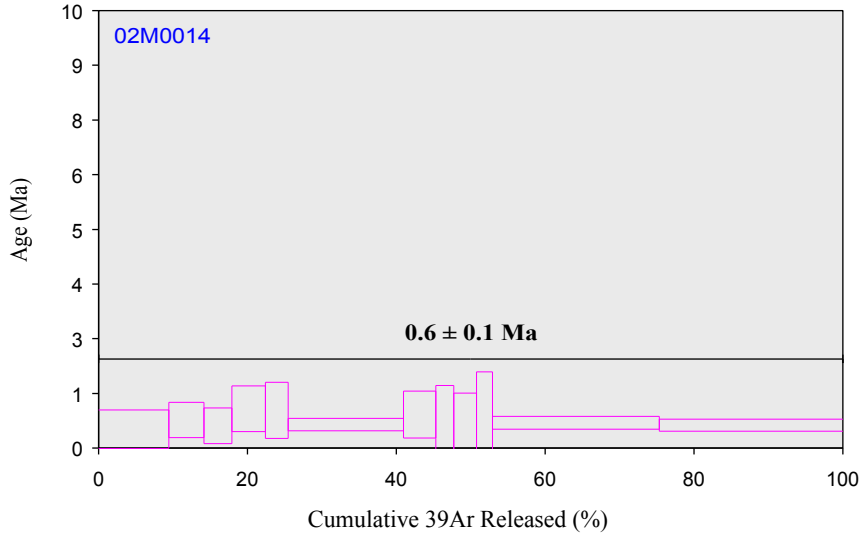
Cocos Ridge
SO144/3-38DR-12 (whole rock)

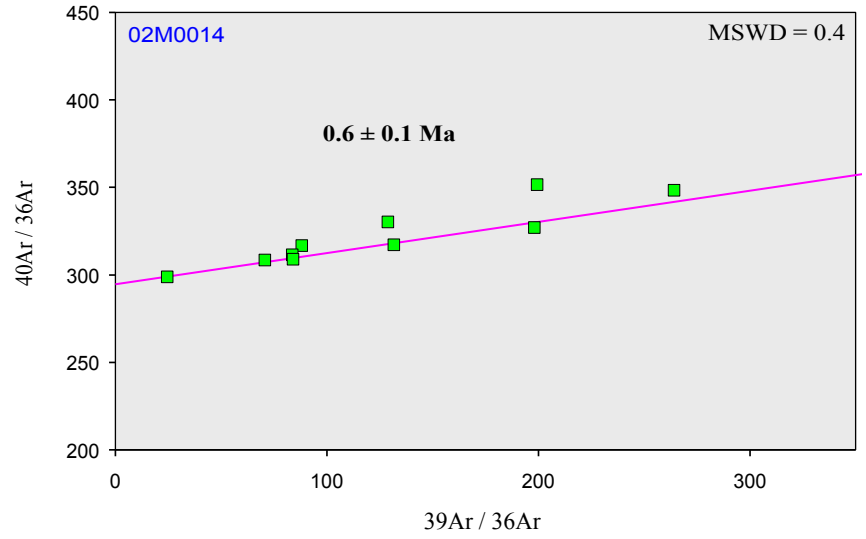


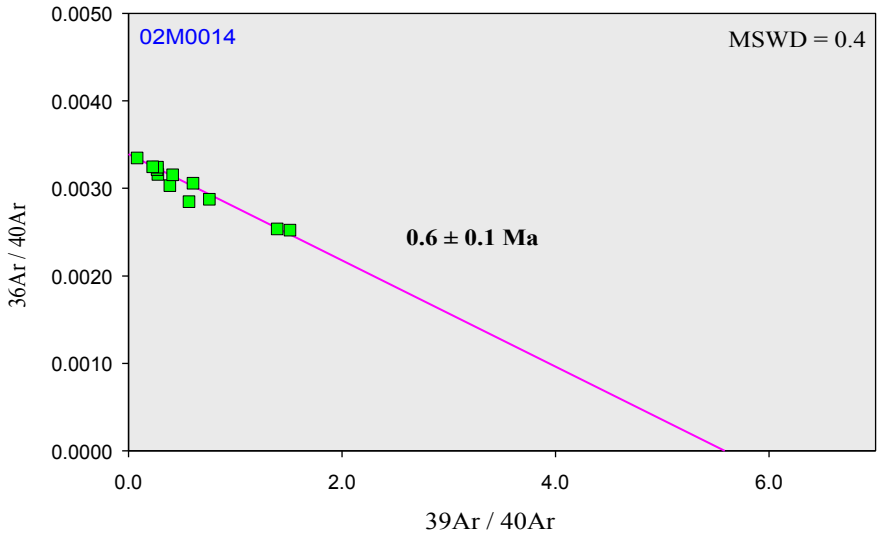




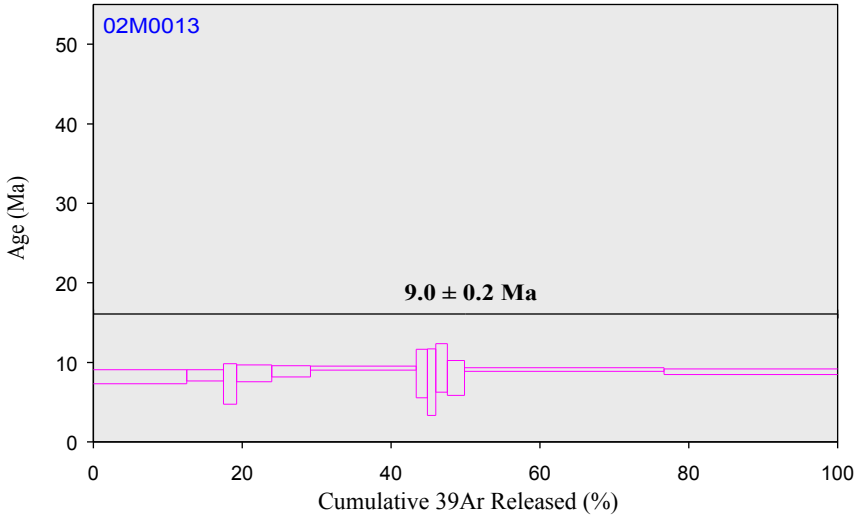
Cocos Ridge
SO144/3-40aDR-1 (whole rock)

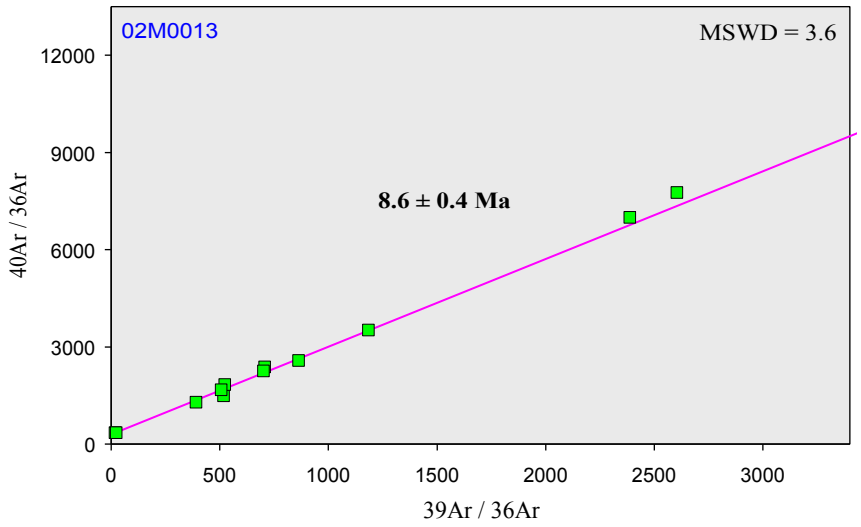


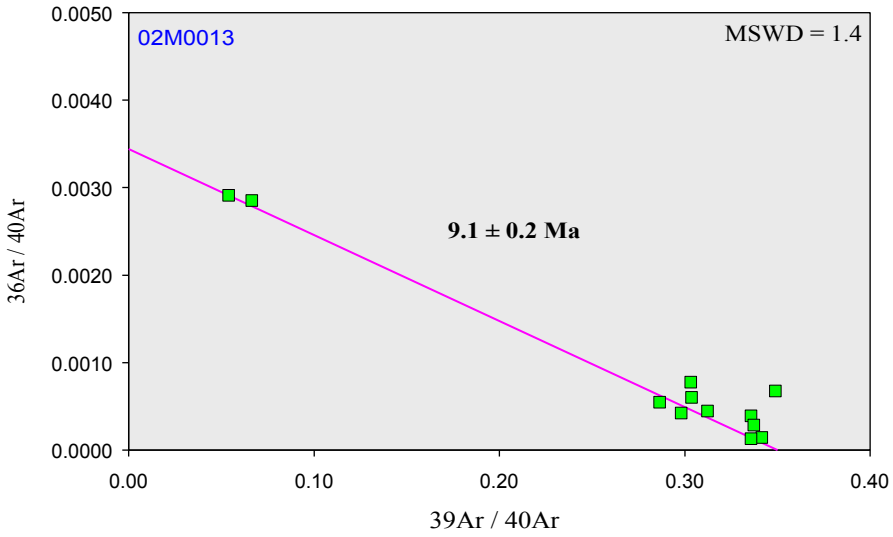




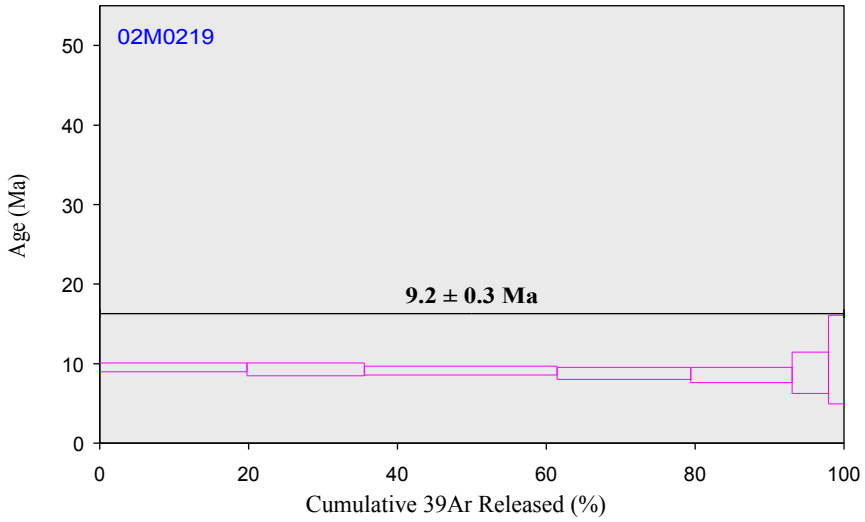
Cocos Ridge
SO144/3-41DR-1 (whole rock)

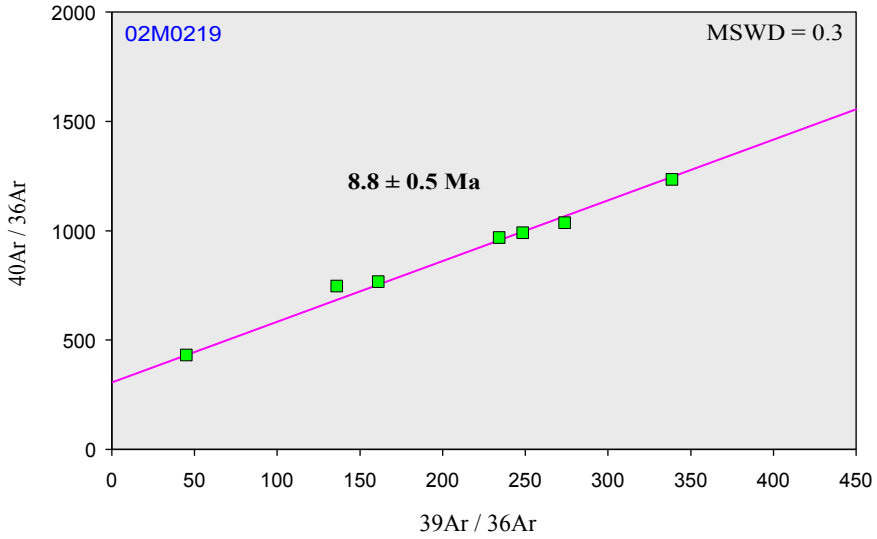


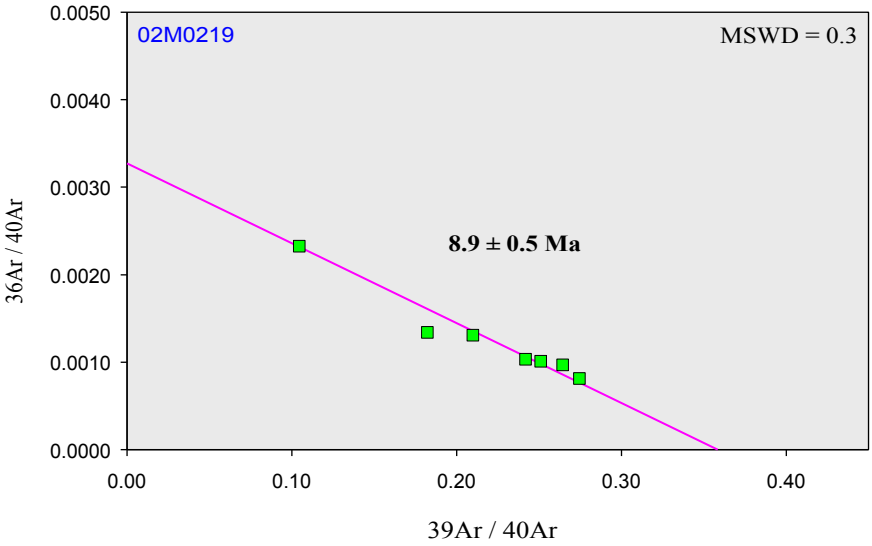




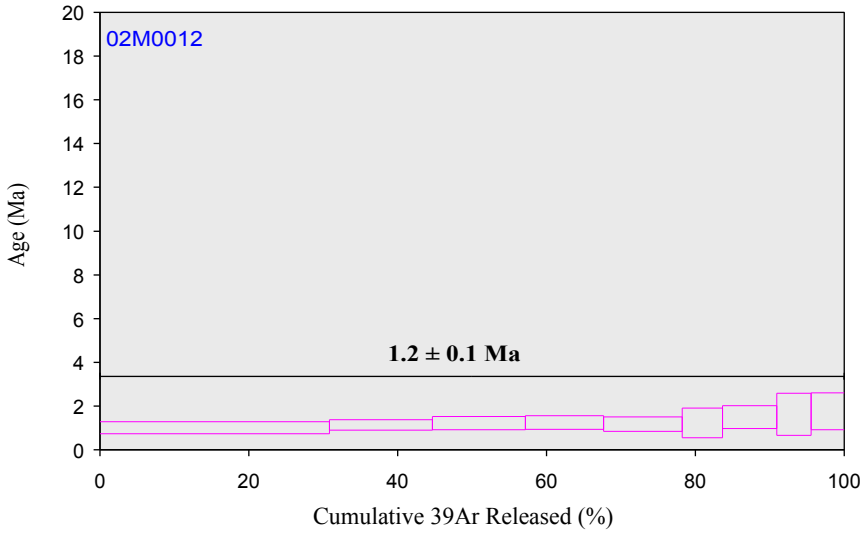
Cocos Ridge
SO144/3-41DR-1 (whole rock)

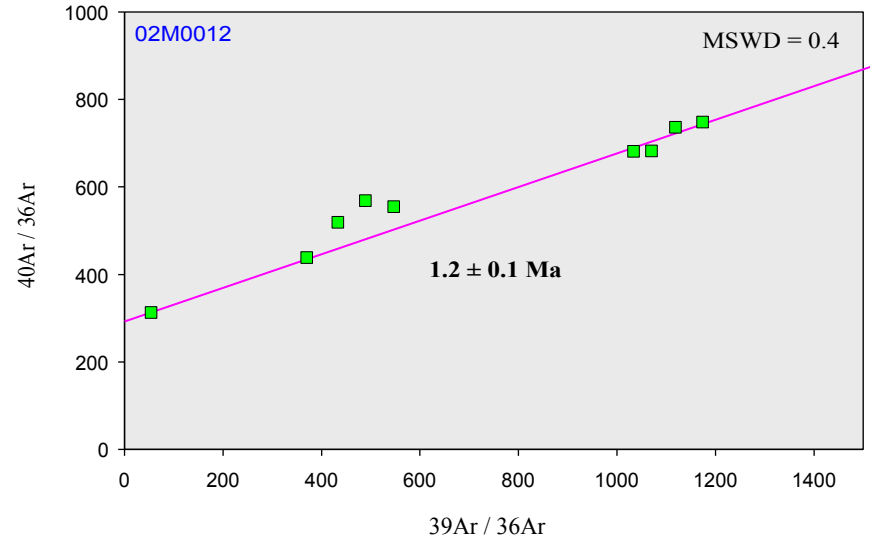


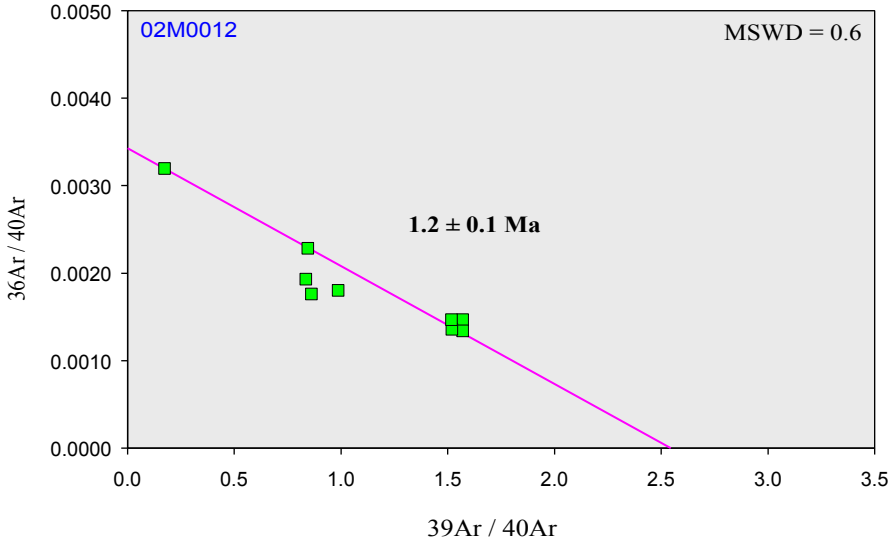




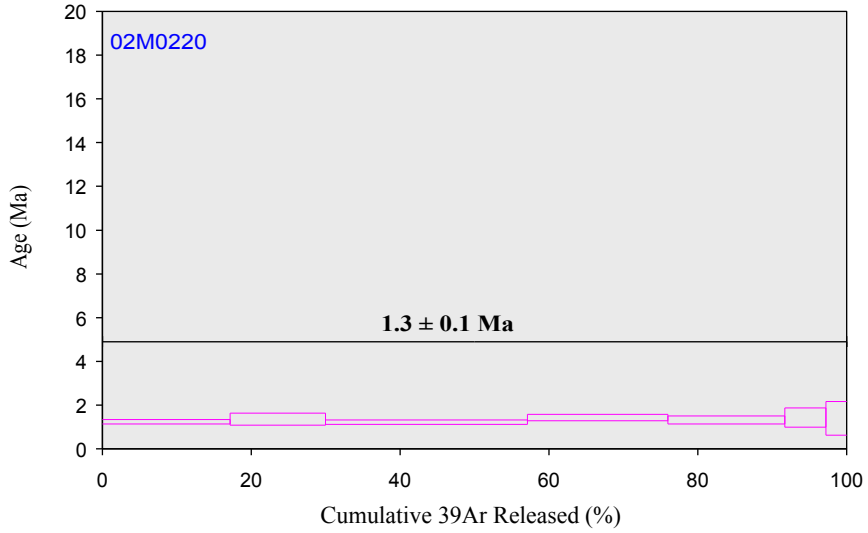
Cocos Ridge
SO144/3-42DR-1 (whole rock)

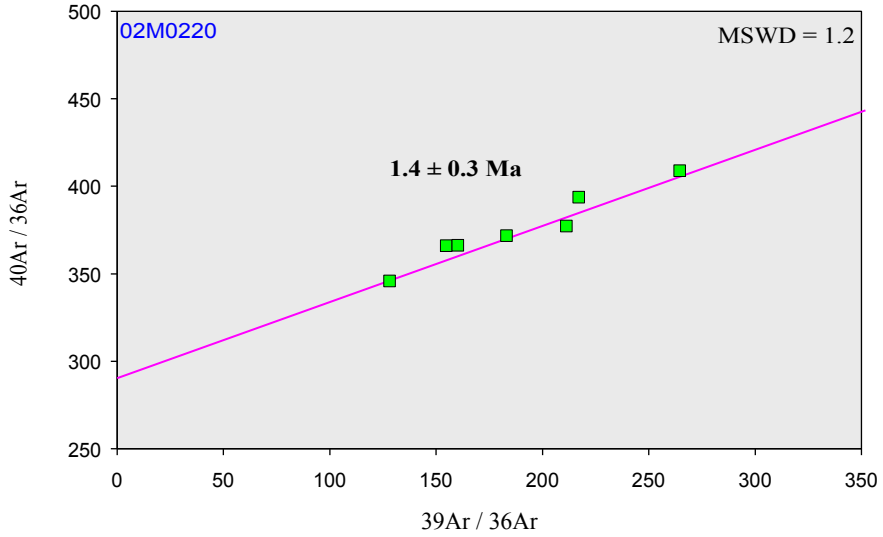


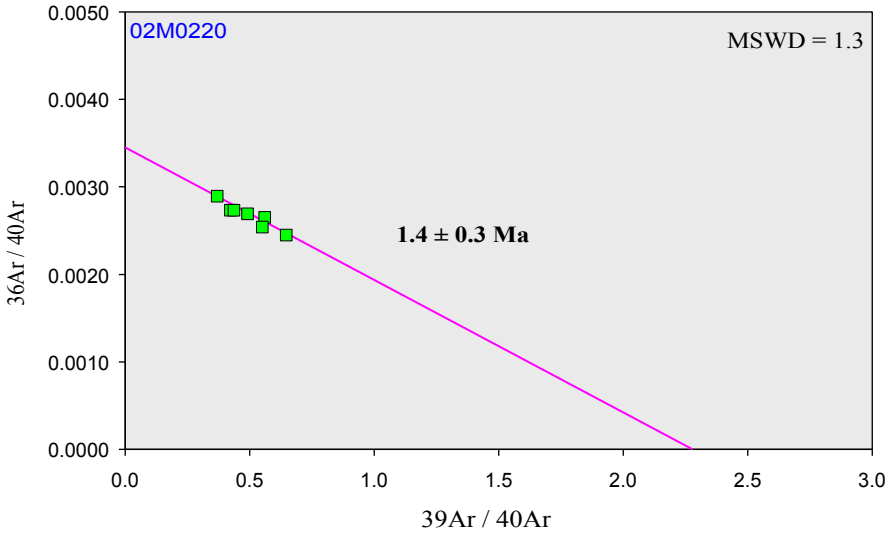




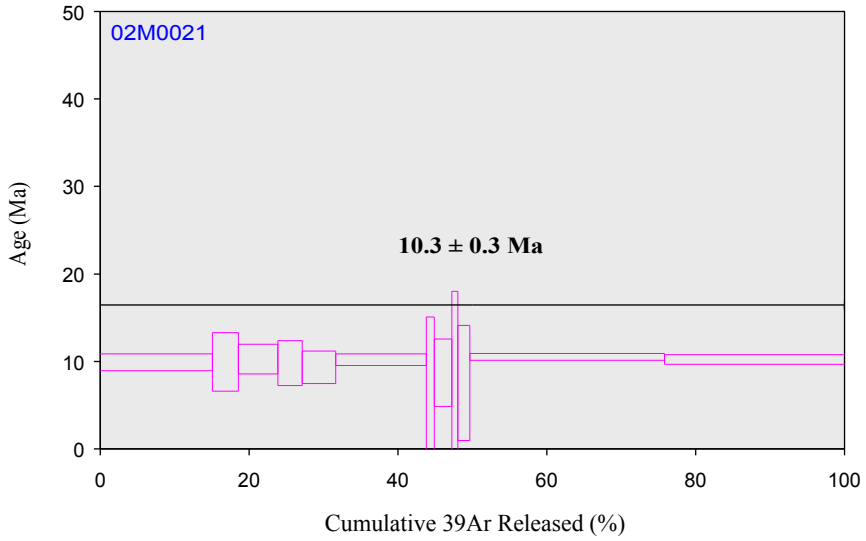
Cocos Ridge
SO144/3-42DR-1 (whole rock)

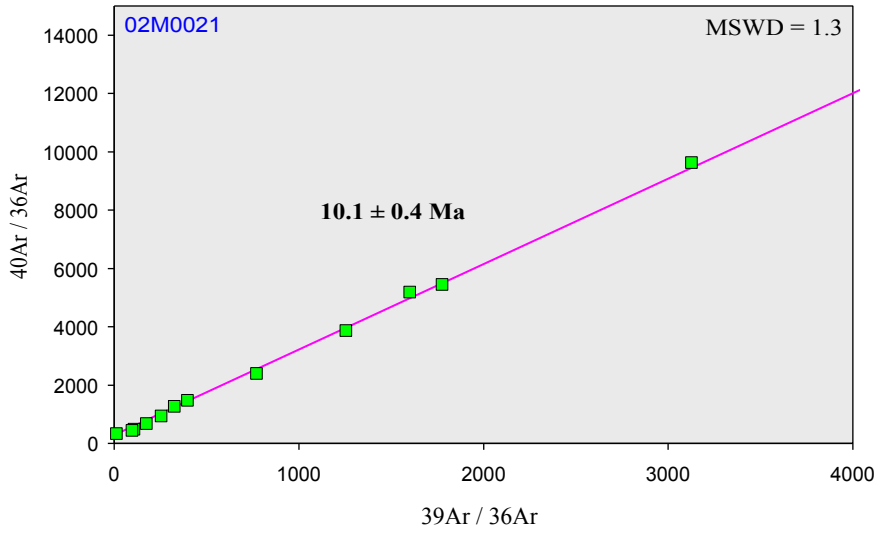


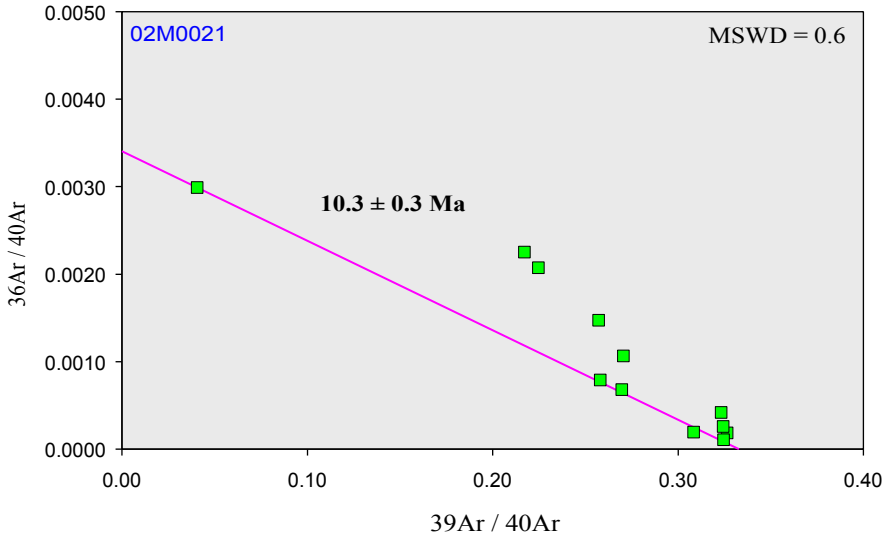




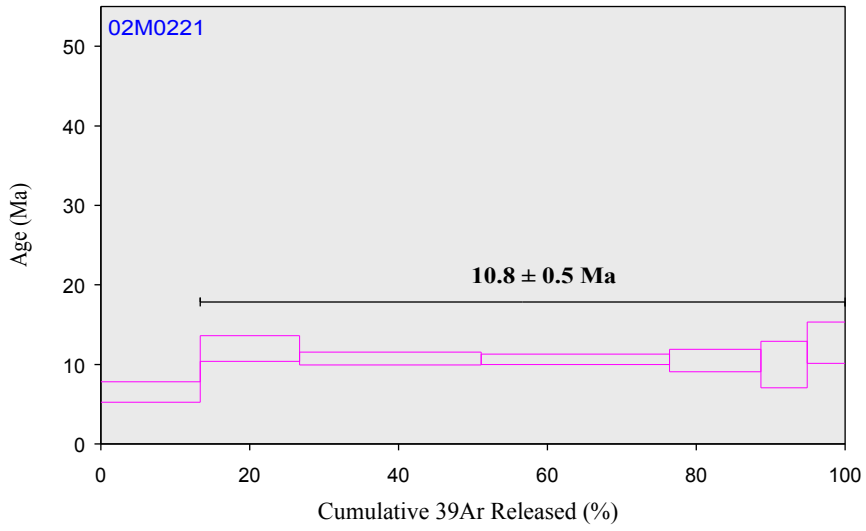
Cocos Ridge
SO144/3-45aDR-1 (whole rock)

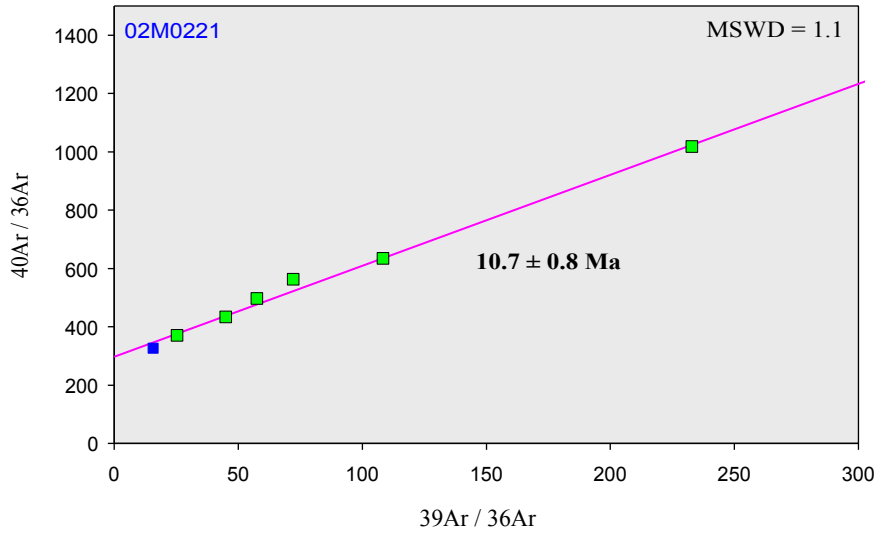


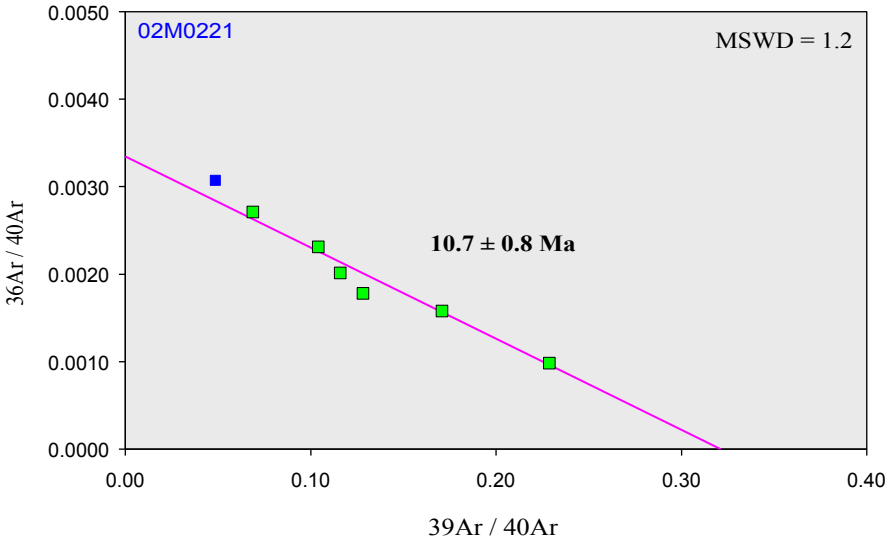




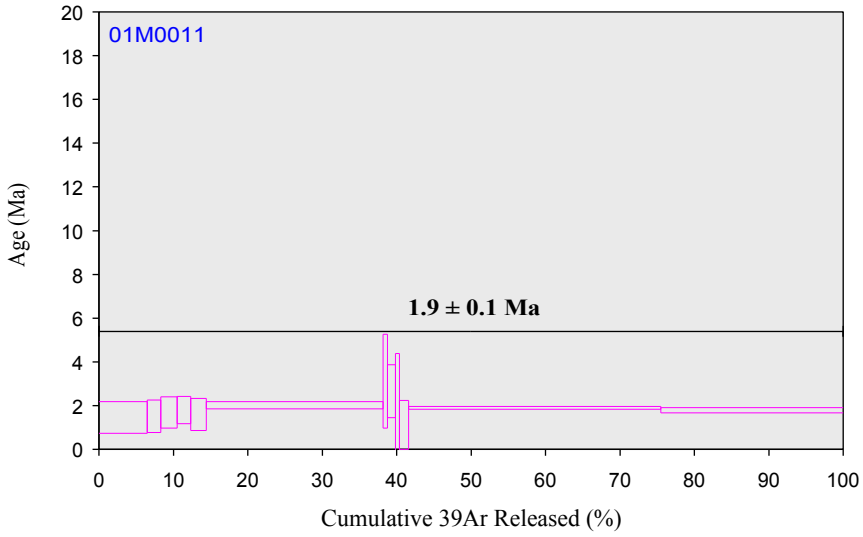
Cocos Ridge
SO144/3-45aDR-1 (whole rock)

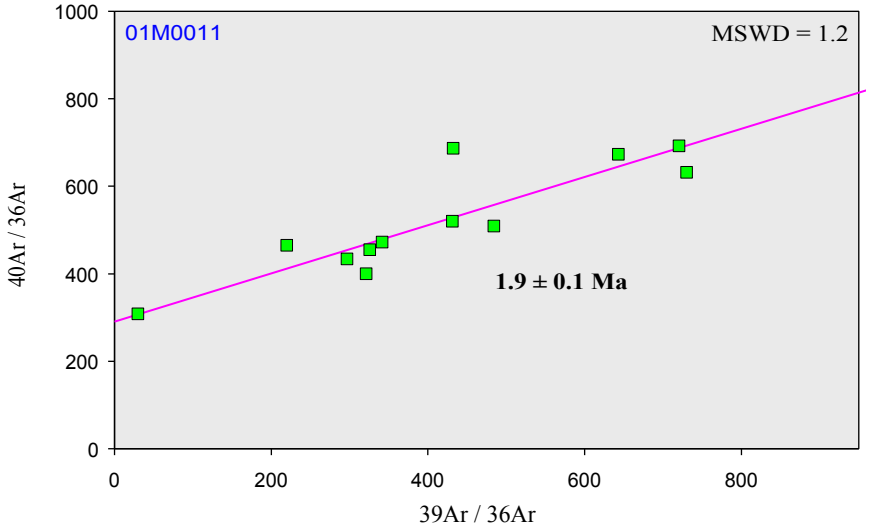


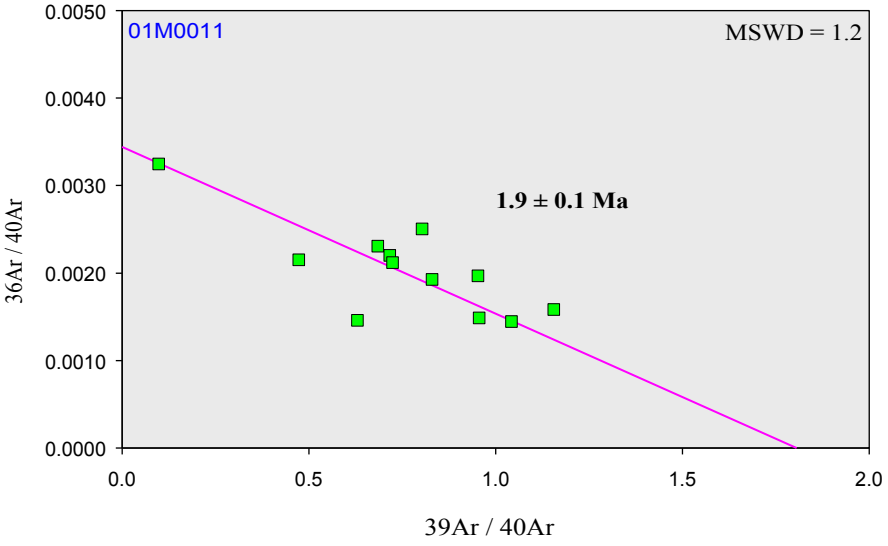




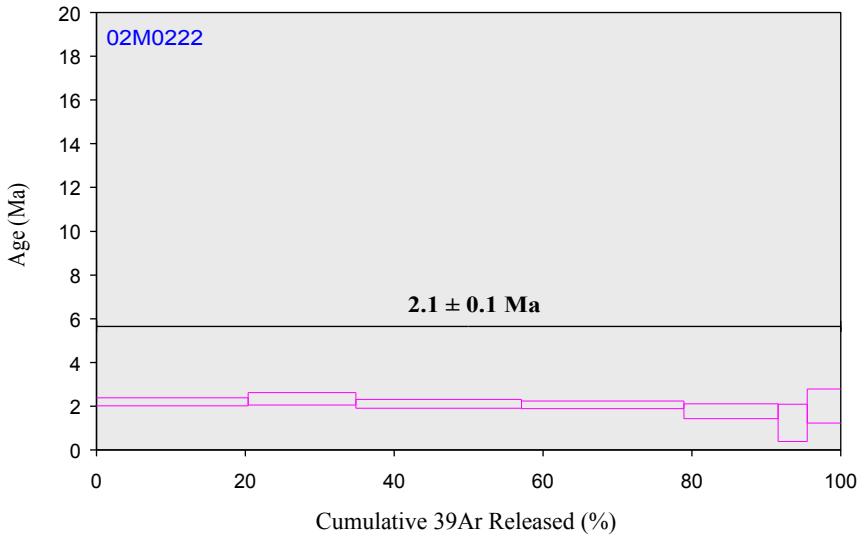
Cocos Ridge
SO144/3-46TVG-1 (whole rock)

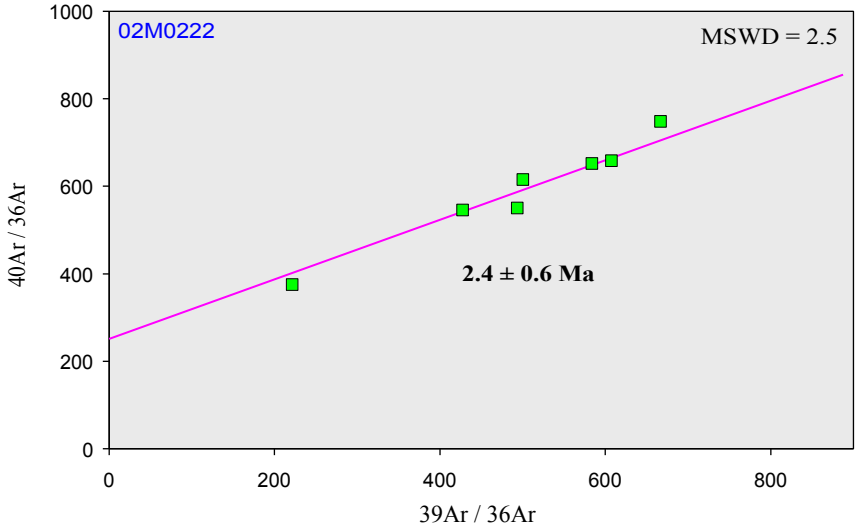


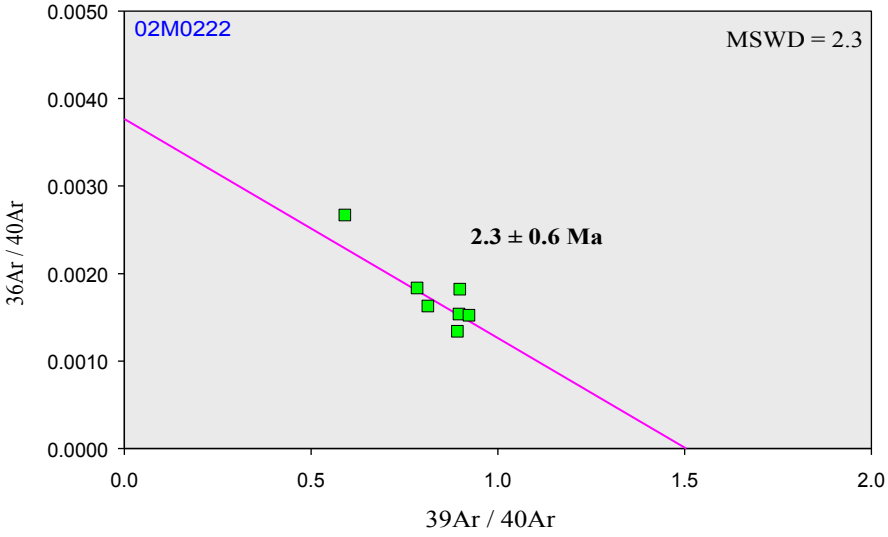




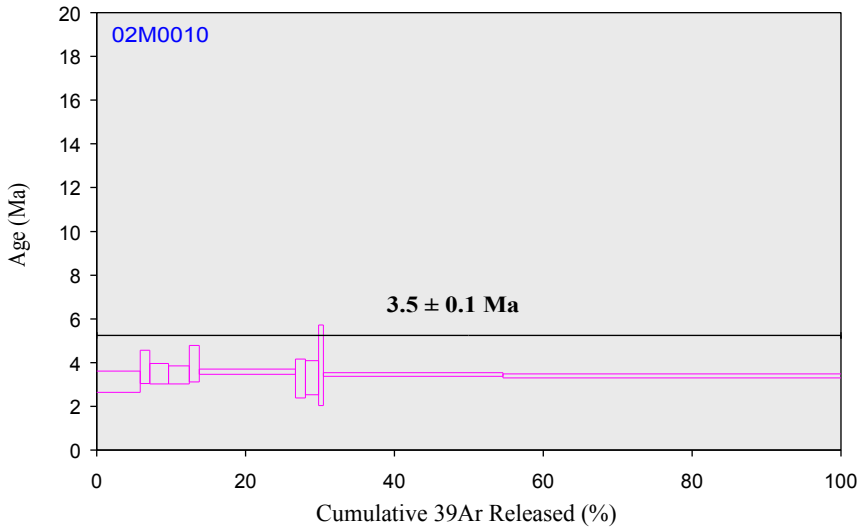
Cocos Ridge
SO144/3-46TVG-1 (whole rock)

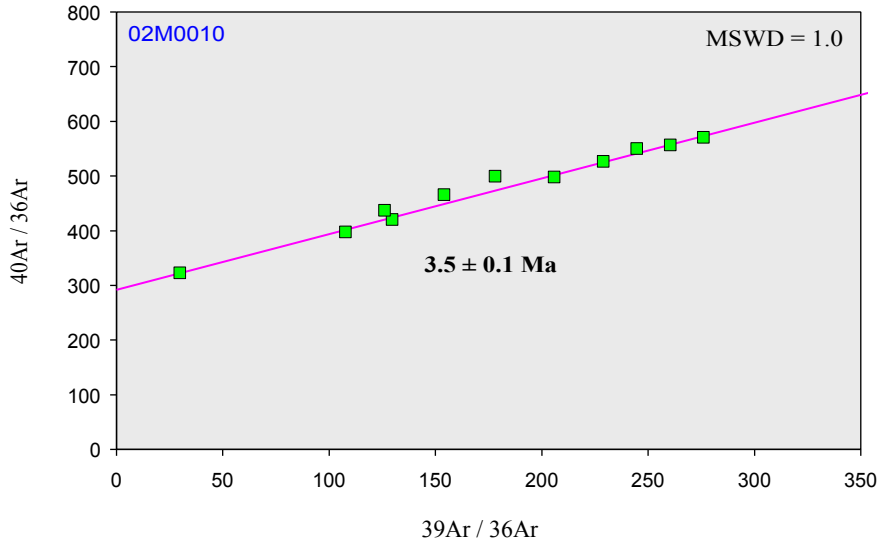


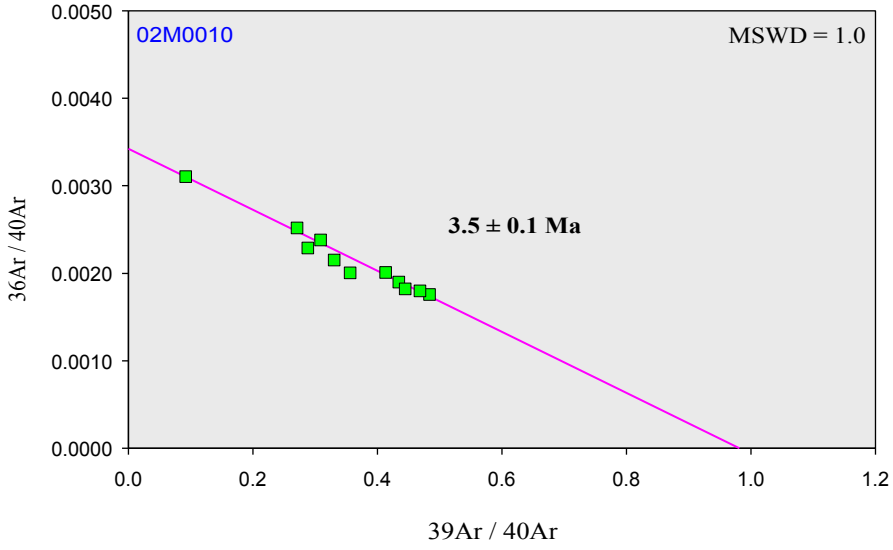




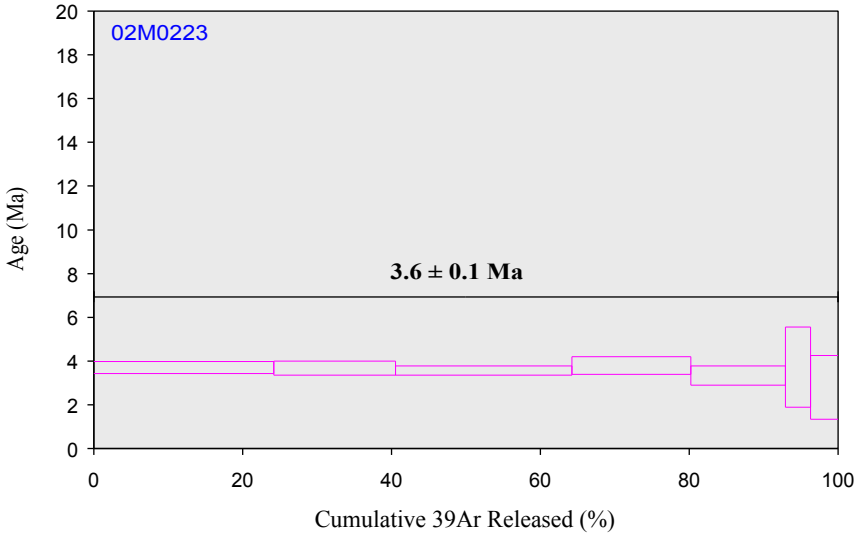
Cocos Ridge
SO144/3-47DR-7 (whole rock)

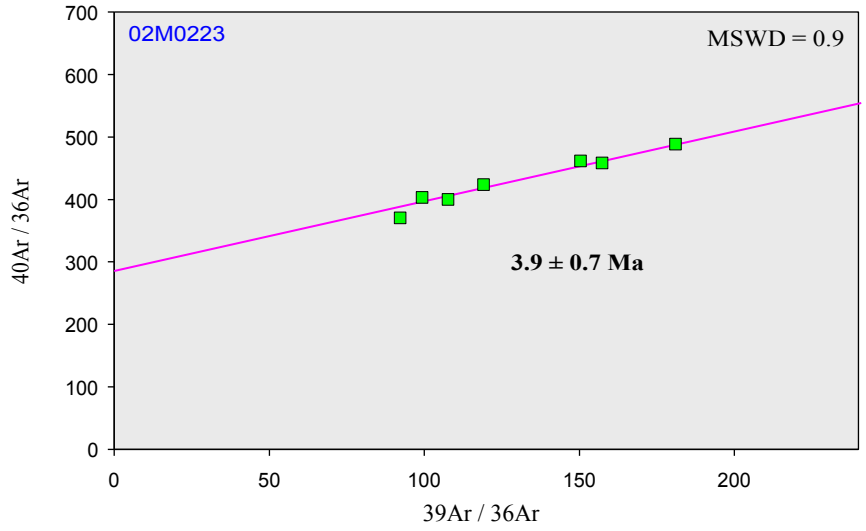


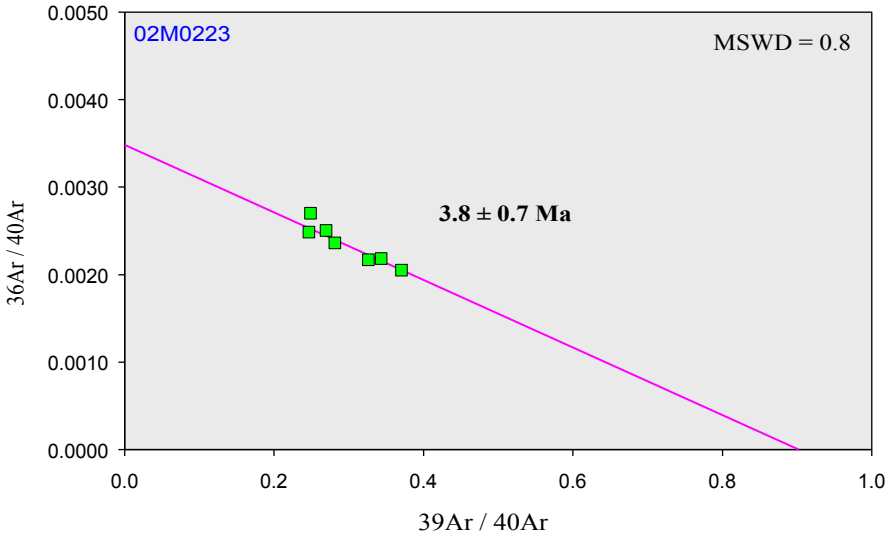




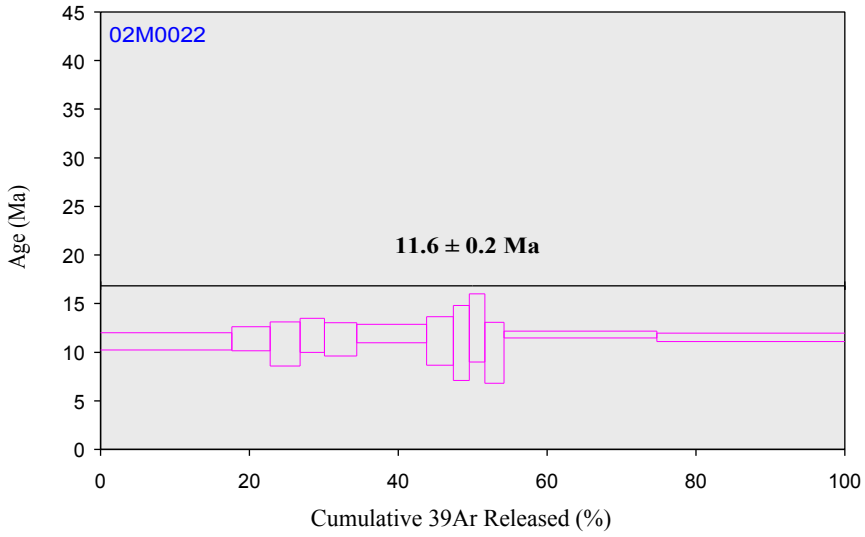
Cocos Ridge
SO144/3-47DR-7 (whole rock)

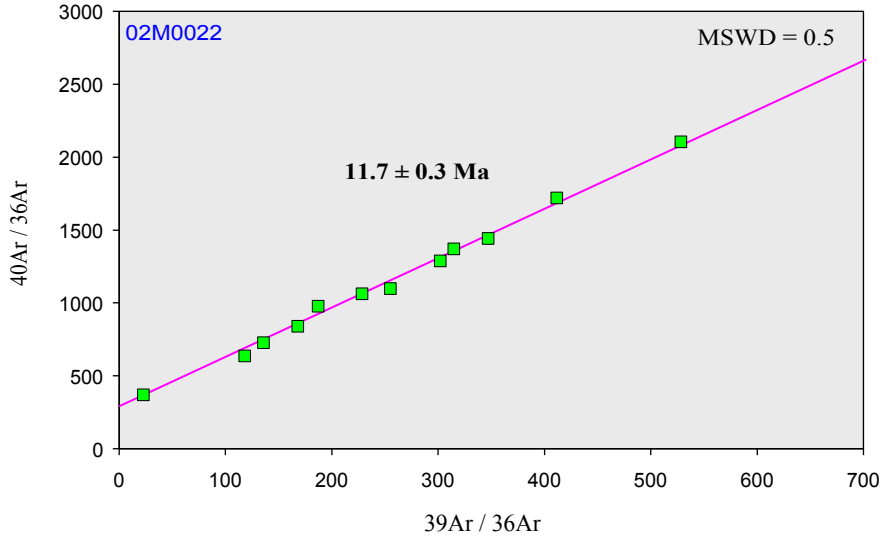


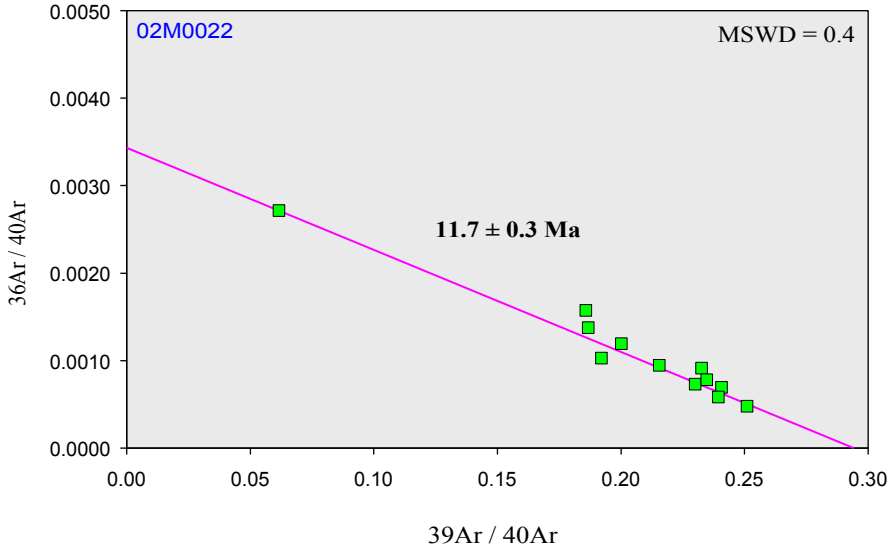




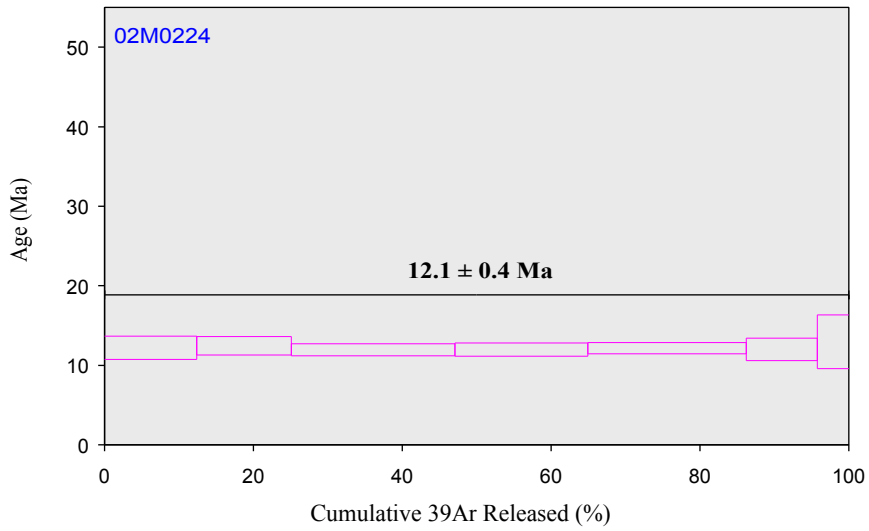
Cocos Ridge
SO144/3-48DR-2 (whole rock)

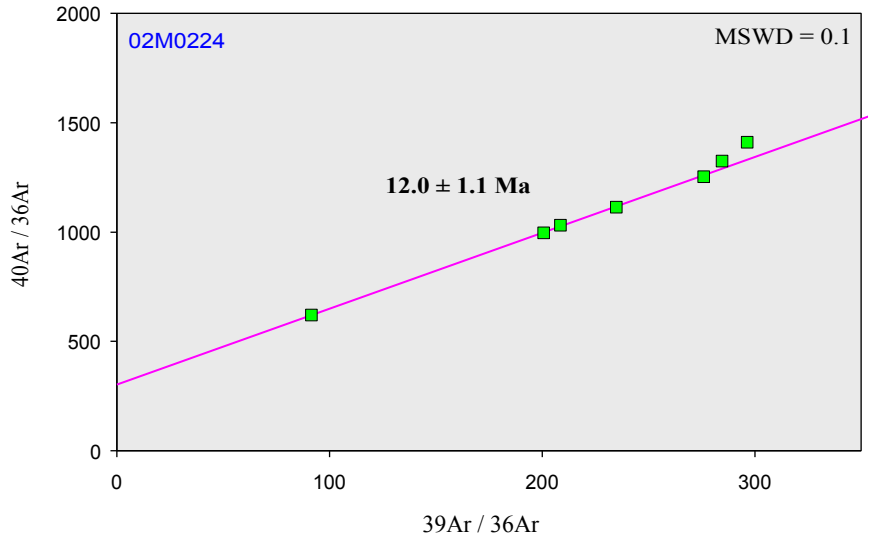


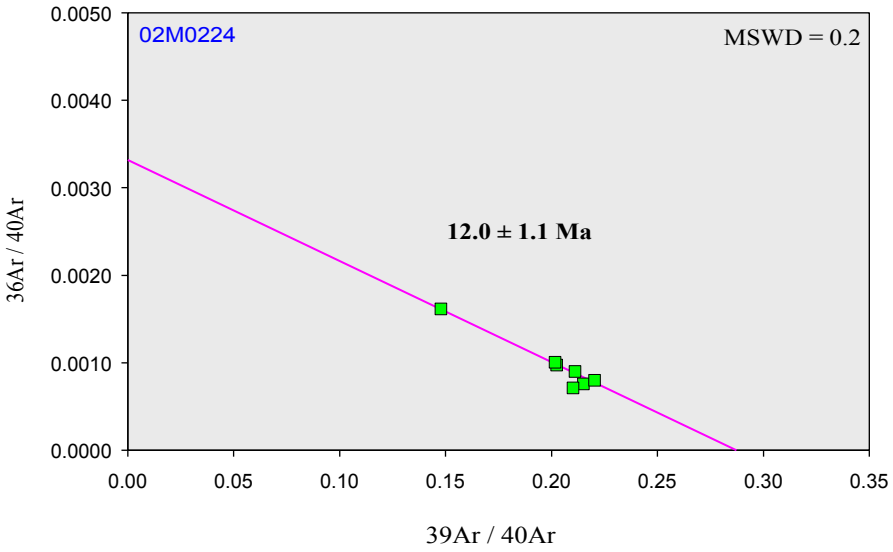




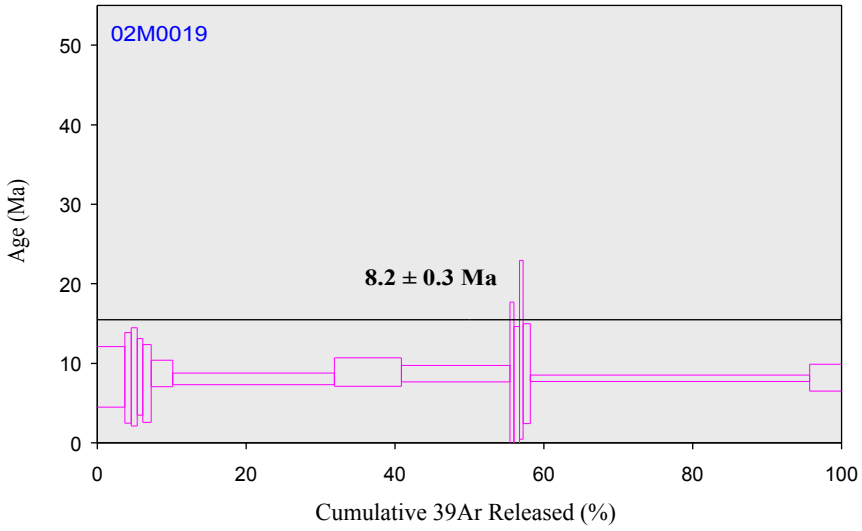
Cocos Ridge
SO144/3-48DR-2 (whole rock)

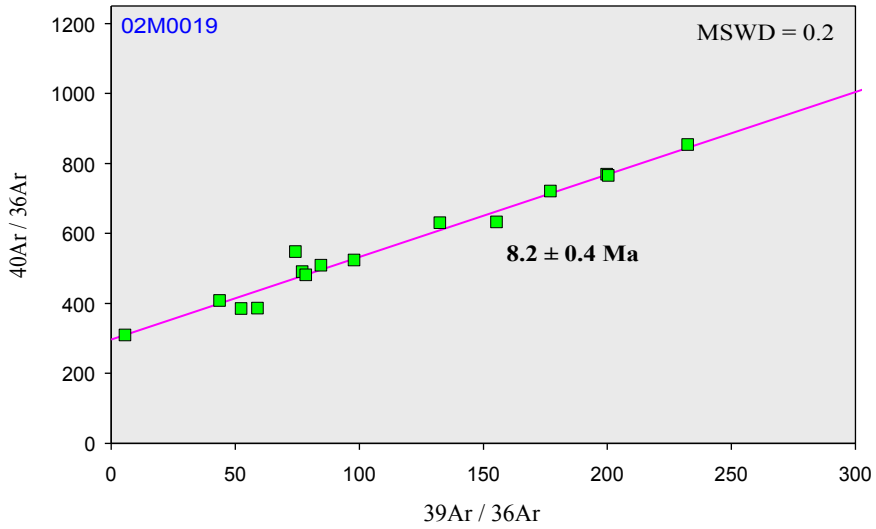


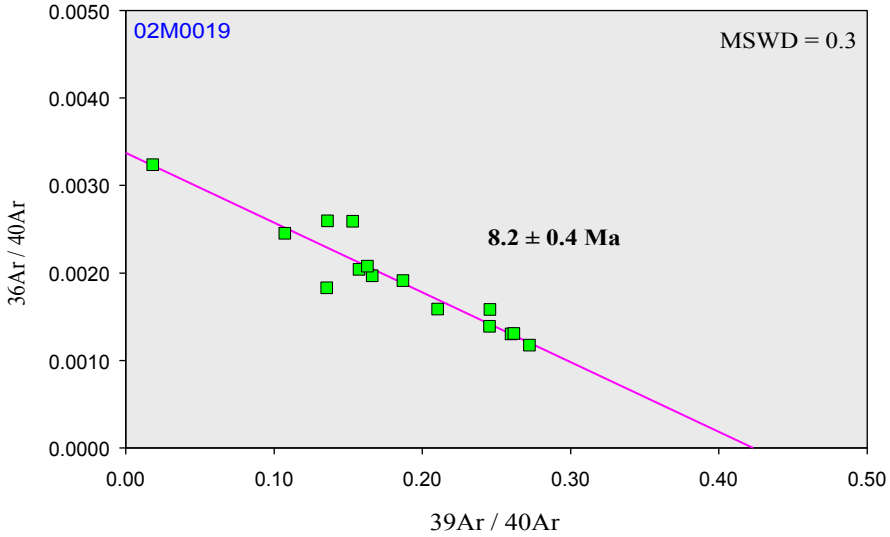




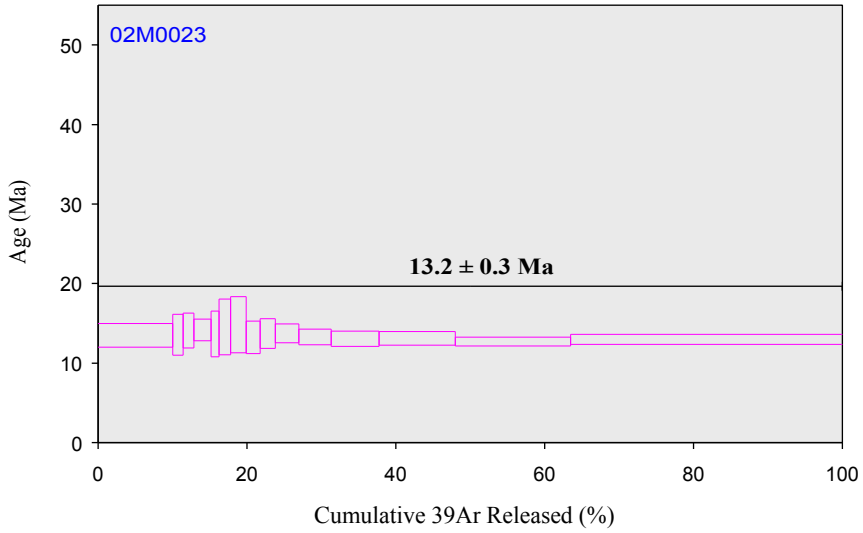
Cocos Ridge
SO144/3-49aDR-1 (whole rock)

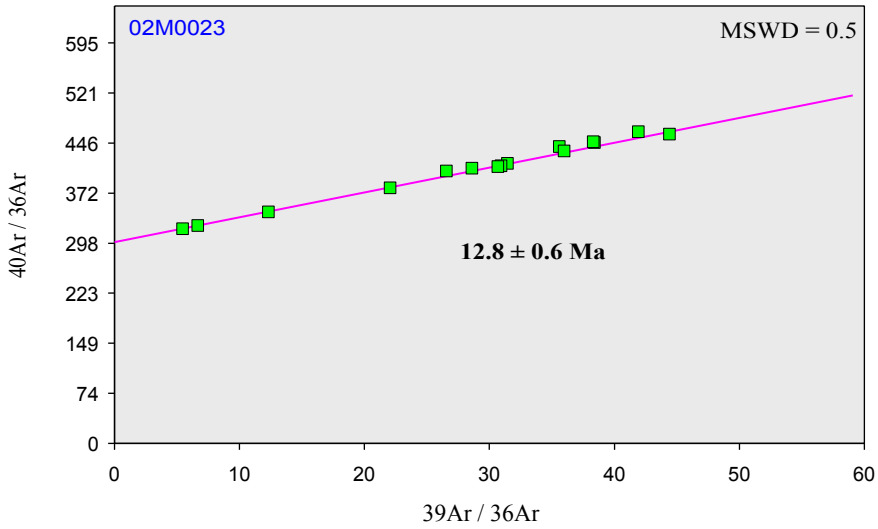


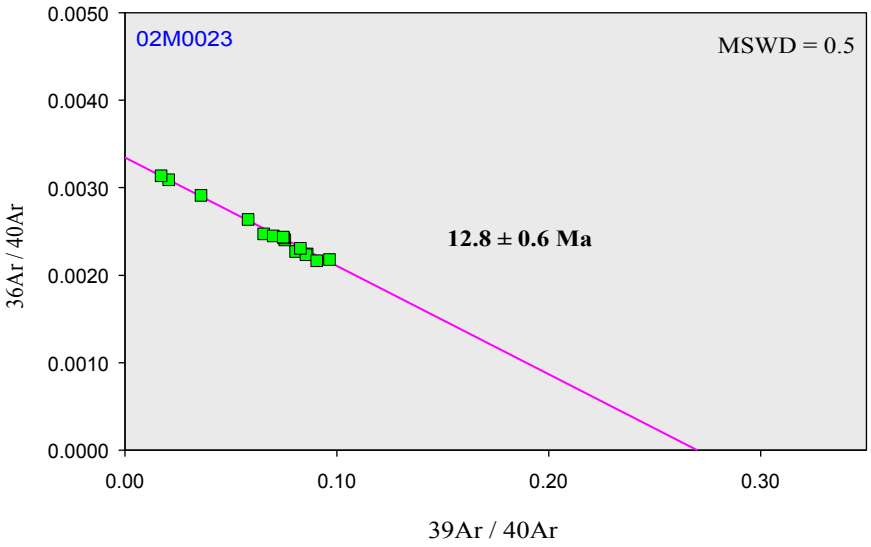




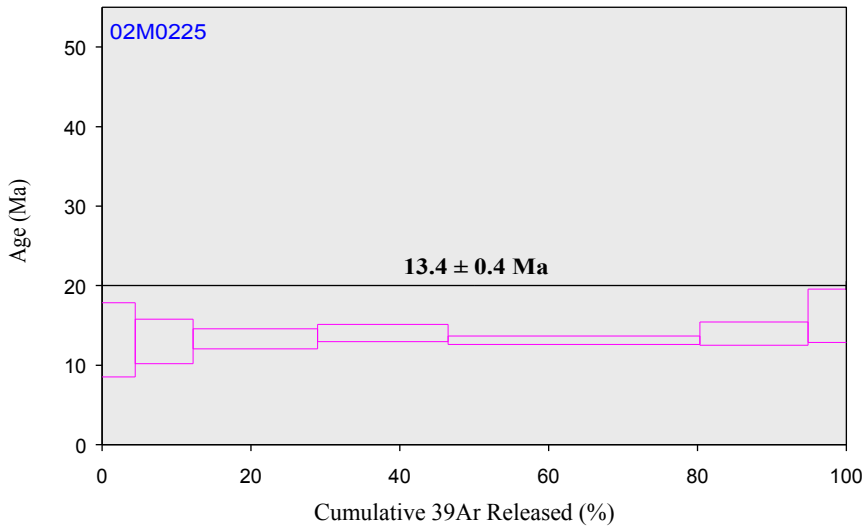
Cocos Ridge
SO144/3-51DR-1 (whole rock)

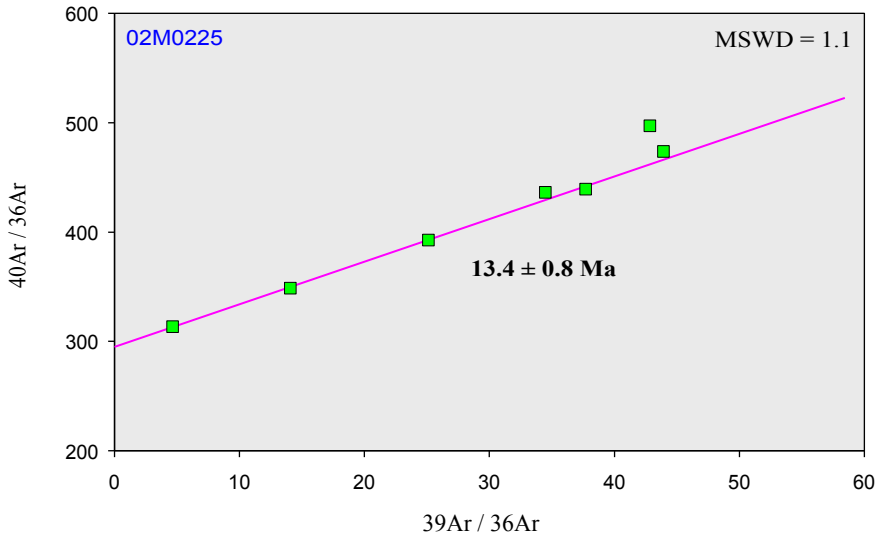


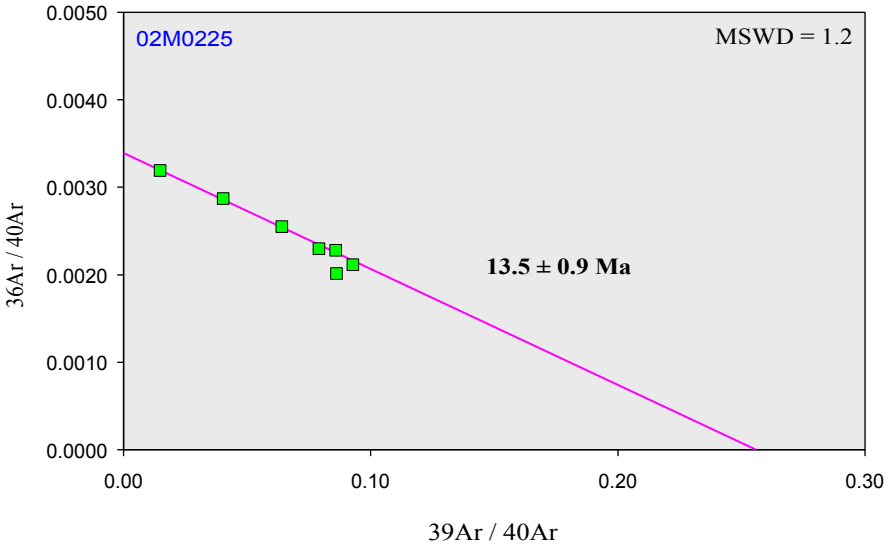




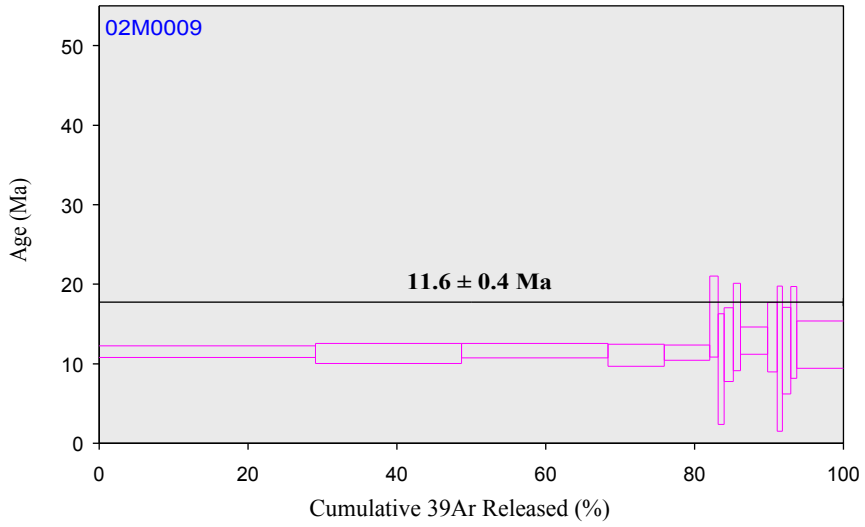
Cocos Ridge
SO144/3-51DR-1 (whole rock)

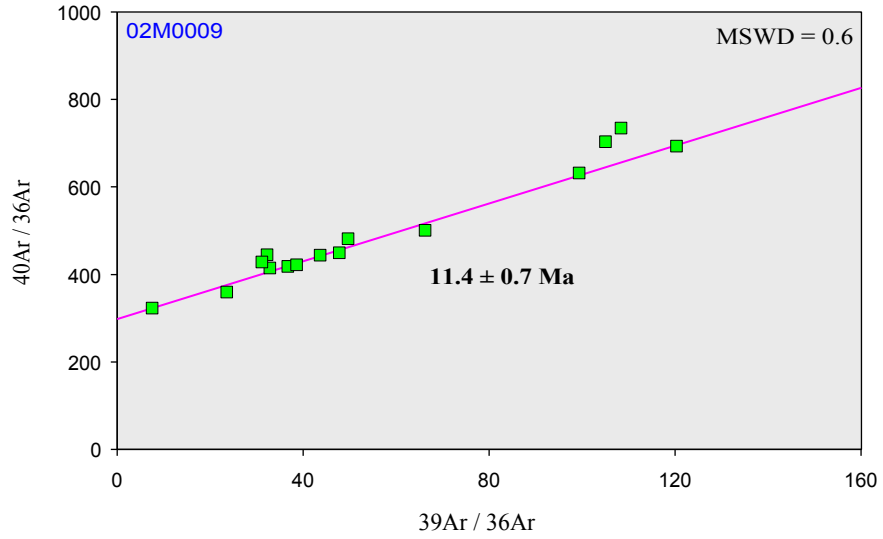


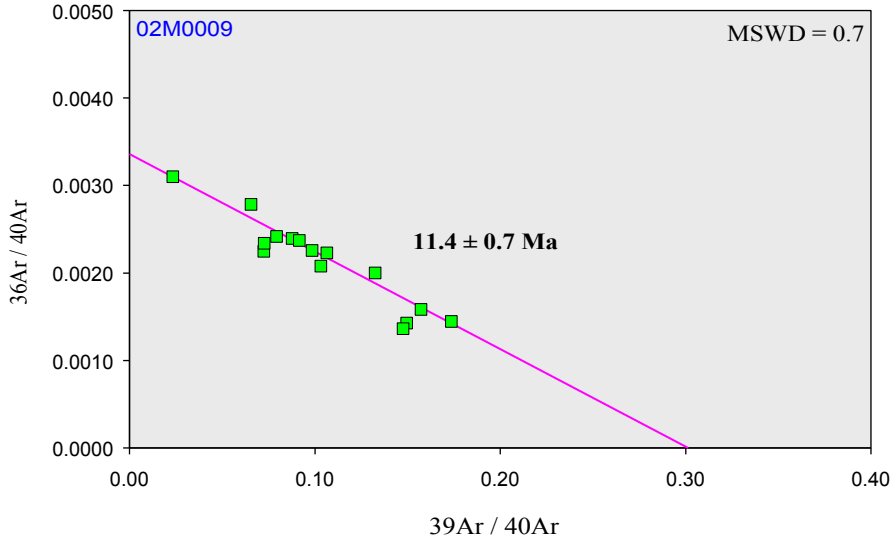




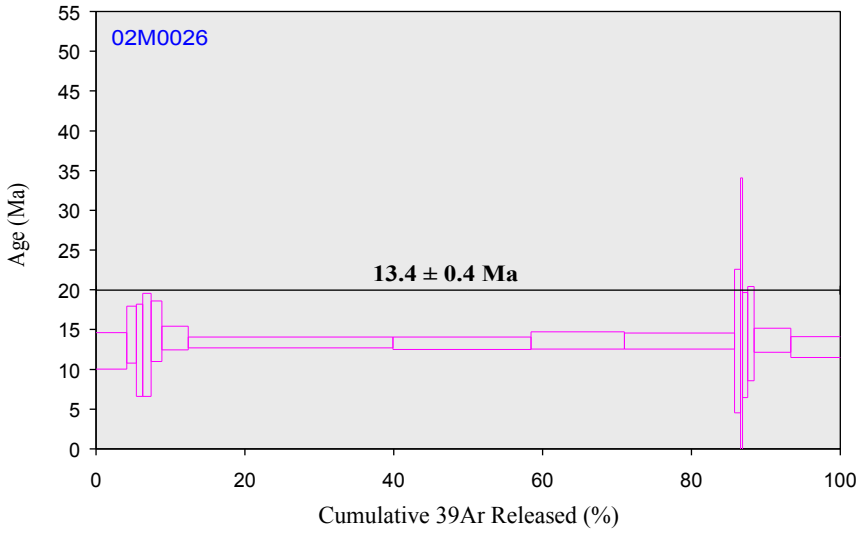
Cocos Ridge
SO144/3-53DR-3 (whole rock)

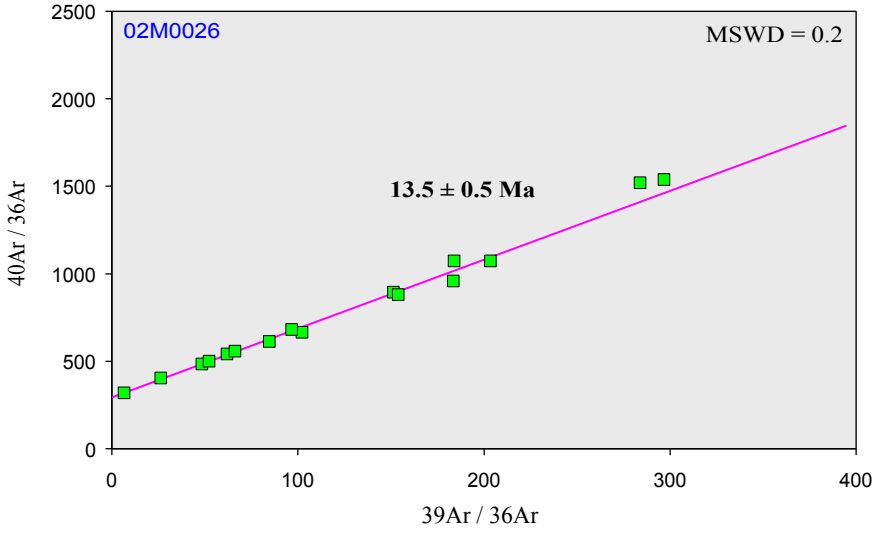


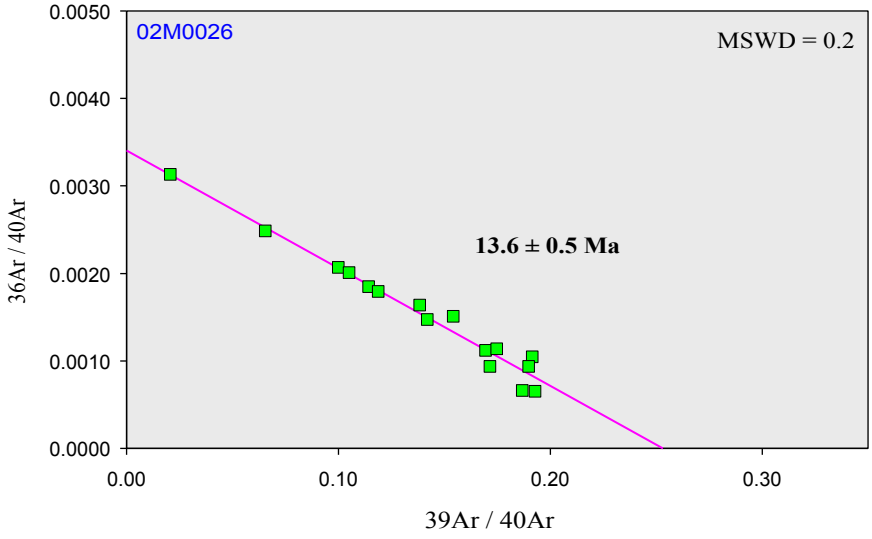




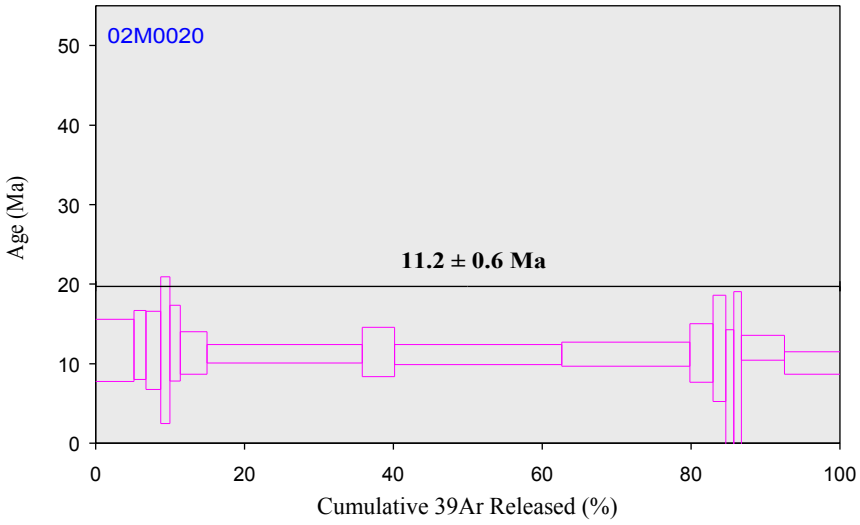
Cocos Ridge
SO144/3-54aDR-2 (whole rock)

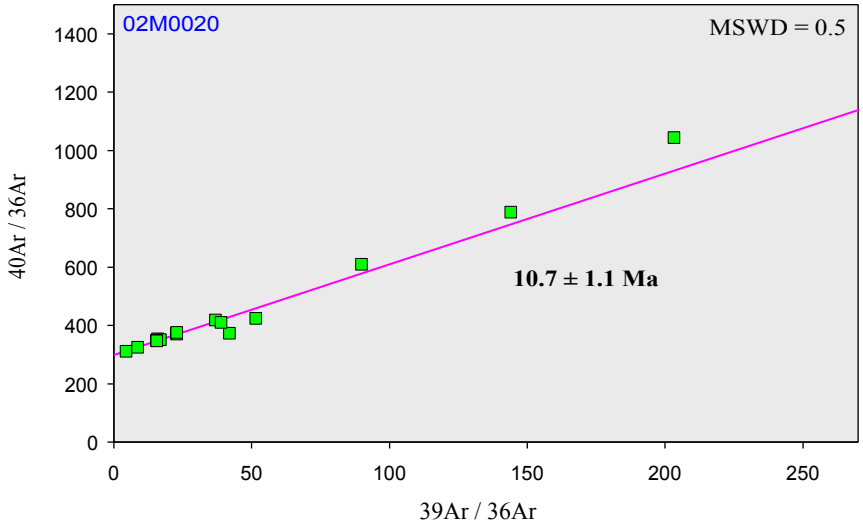


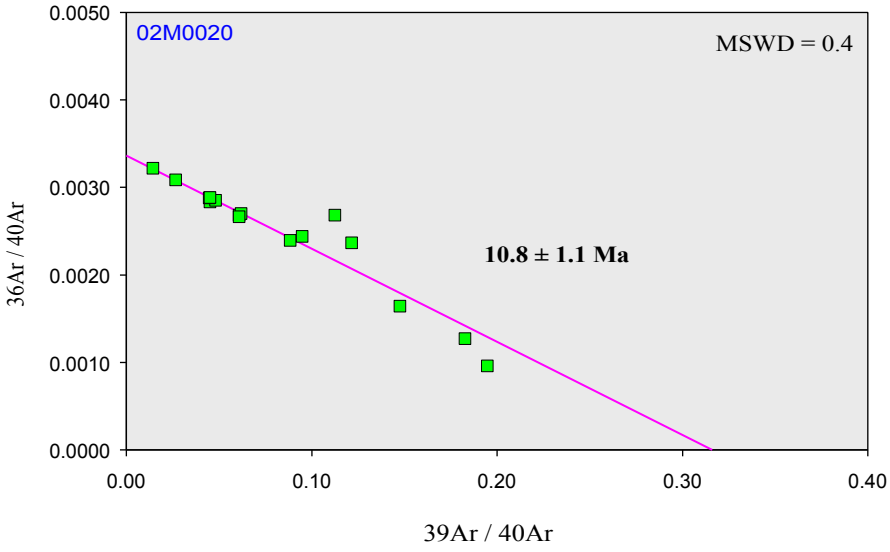




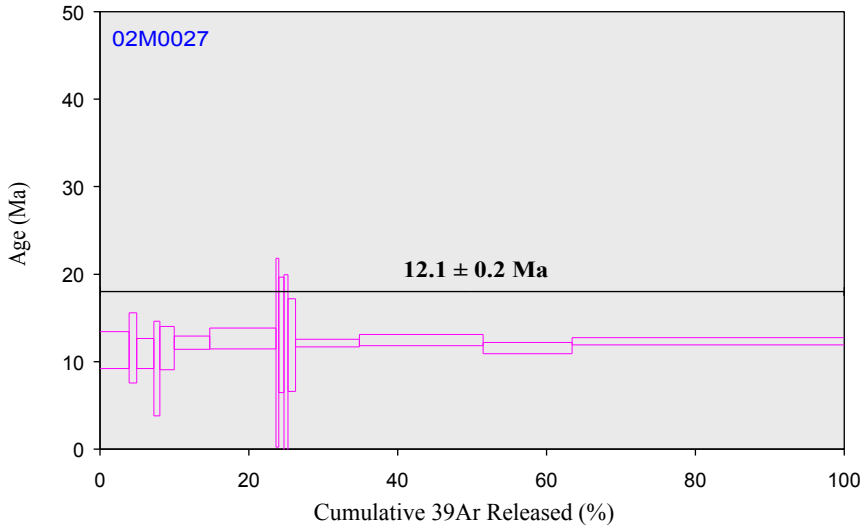
Cocos Ridge
SO144/3-55DR-1 (whole rock)

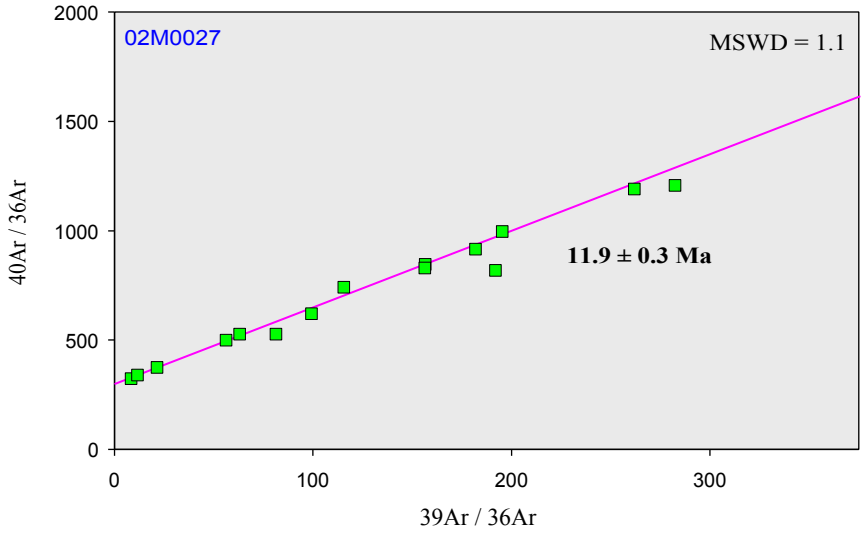


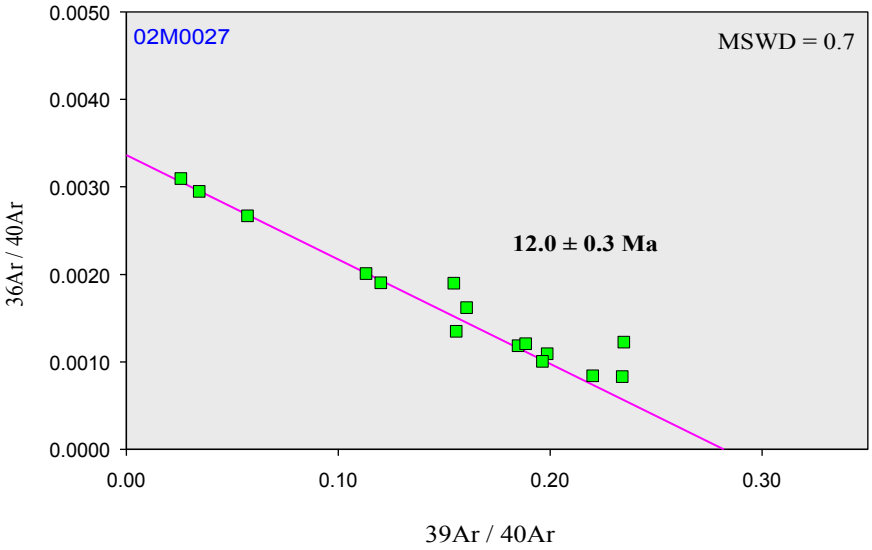




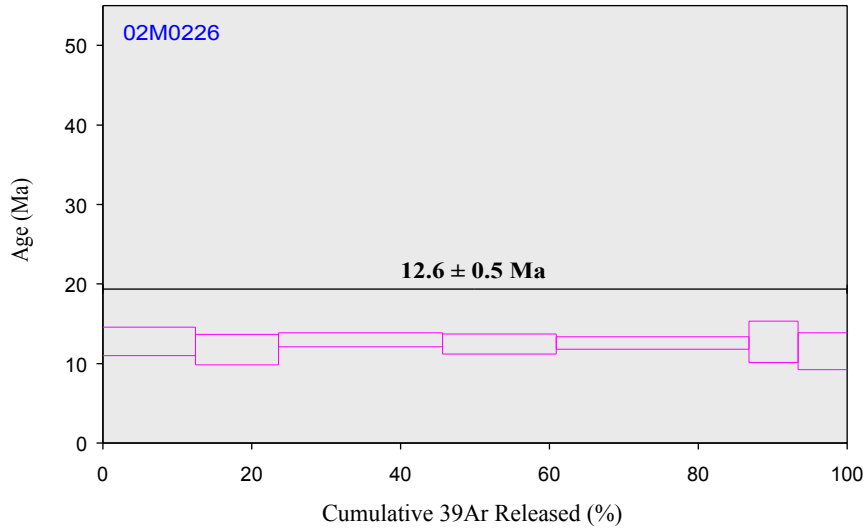
Cocos Ridge
SO144/3-56TVG-1 (whole rock)

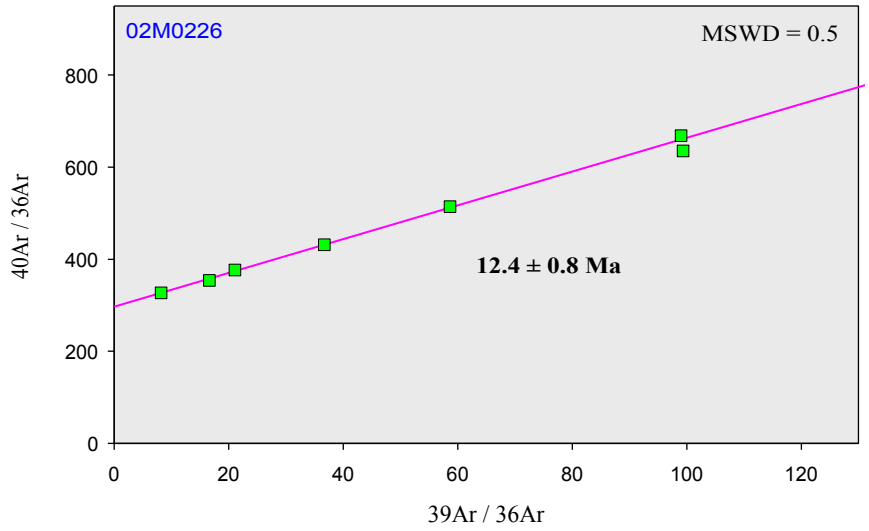


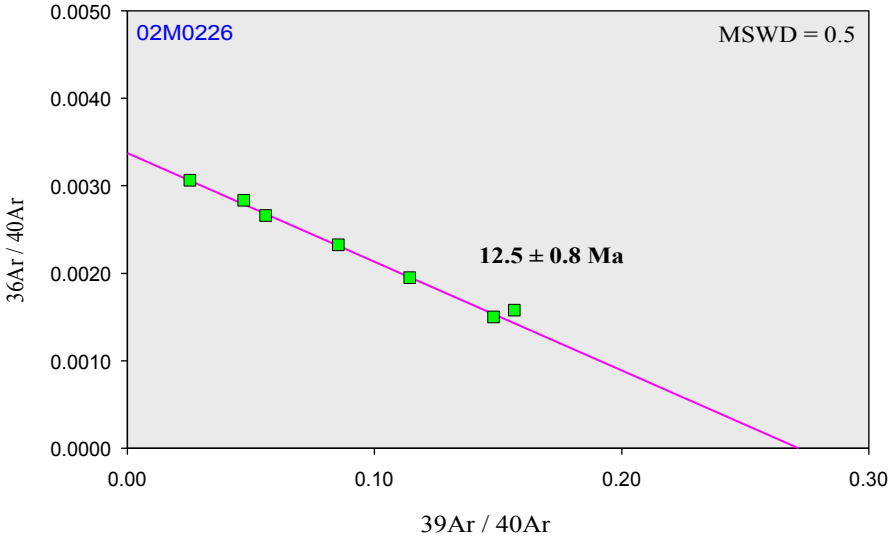




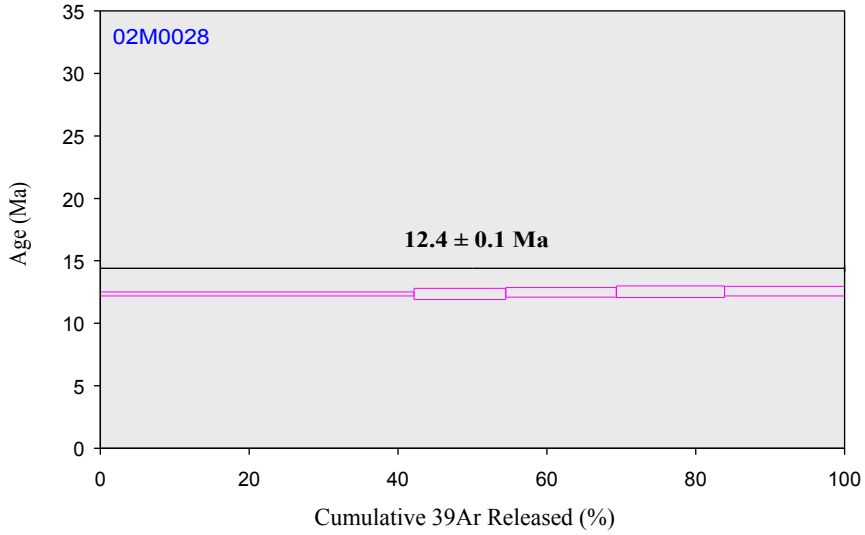
Cocos Ridge
SO144/3-56TVG-1 (whole rock)

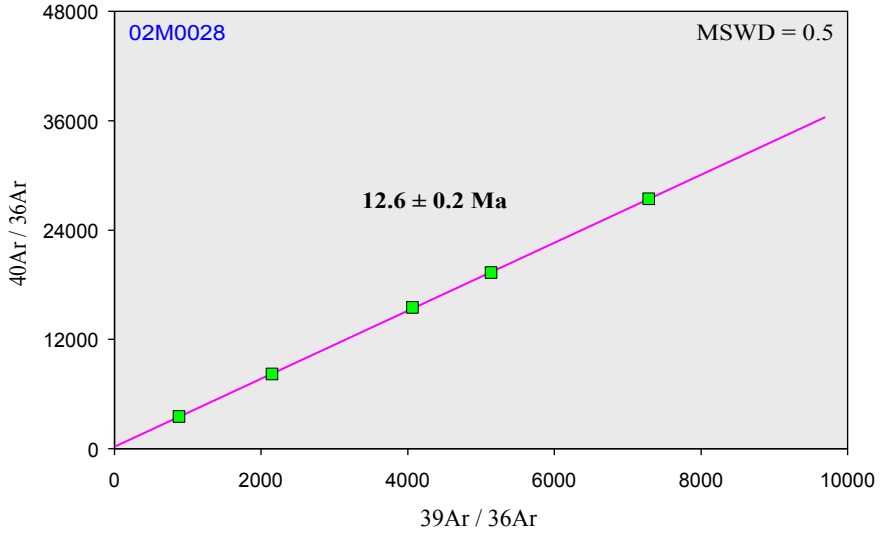


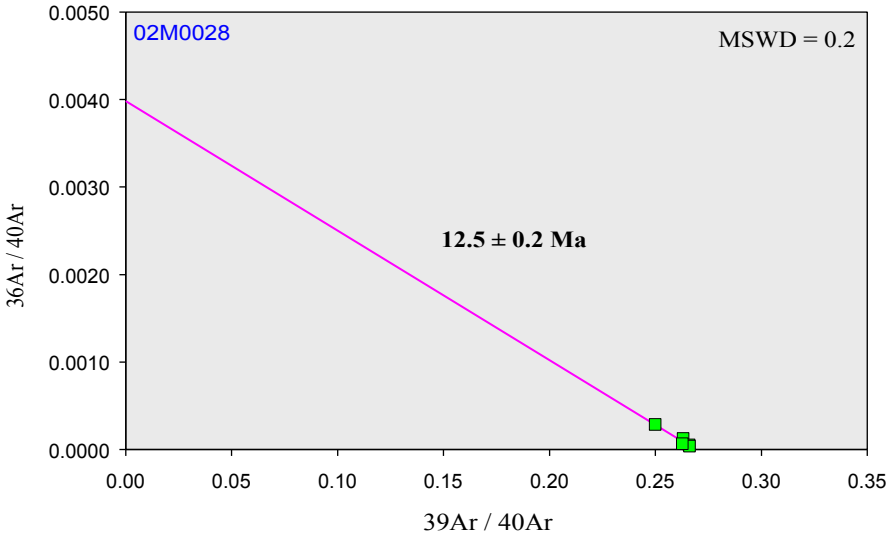




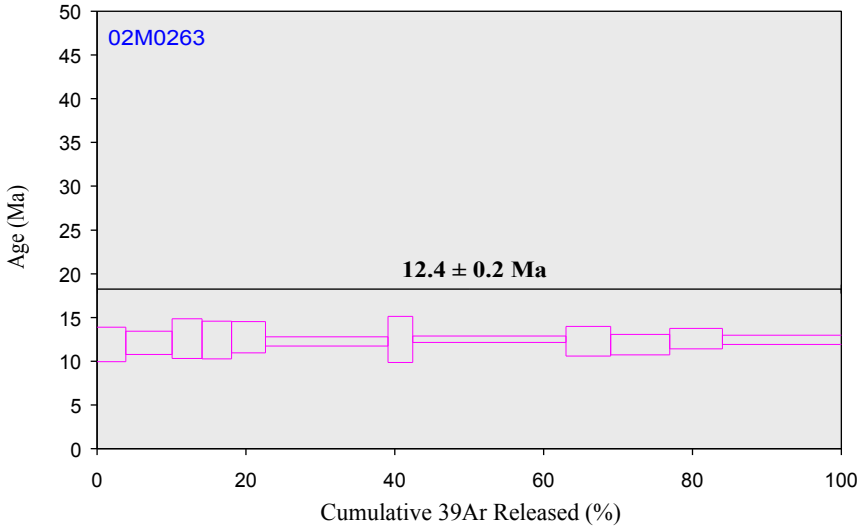
Cocos Ridge
SO144/3-60DR-8 (plagioclase)

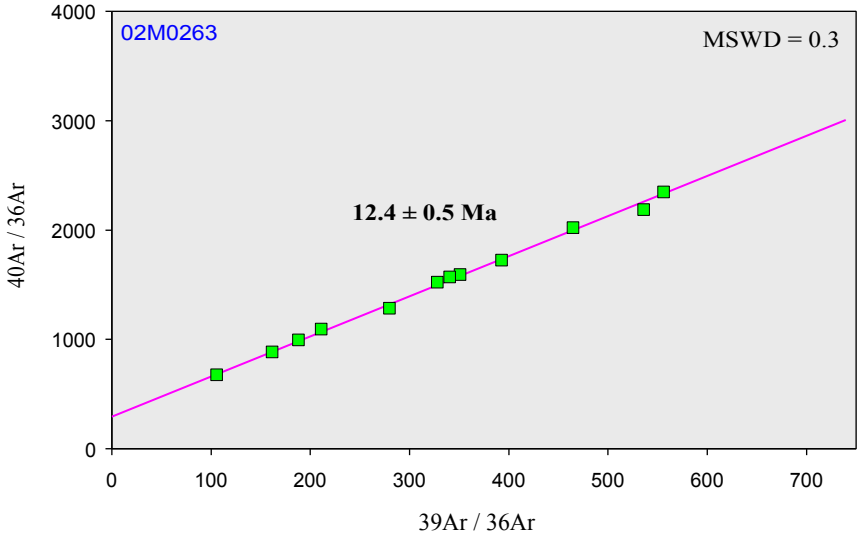


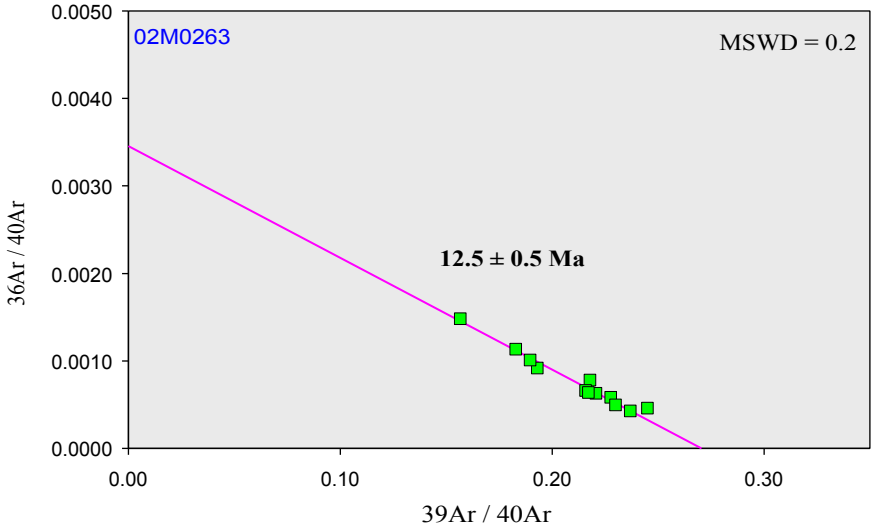




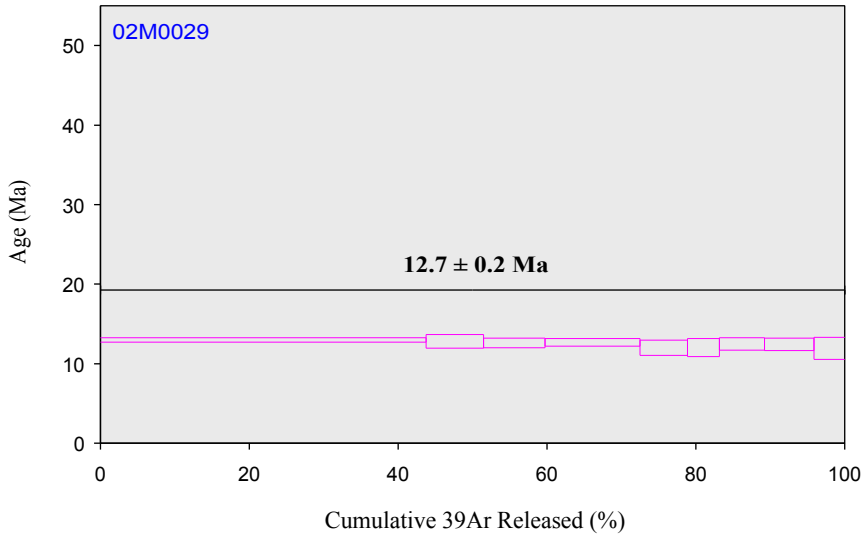
Cocos Ridge
SO144/3-60DR-8 (plagioclase)

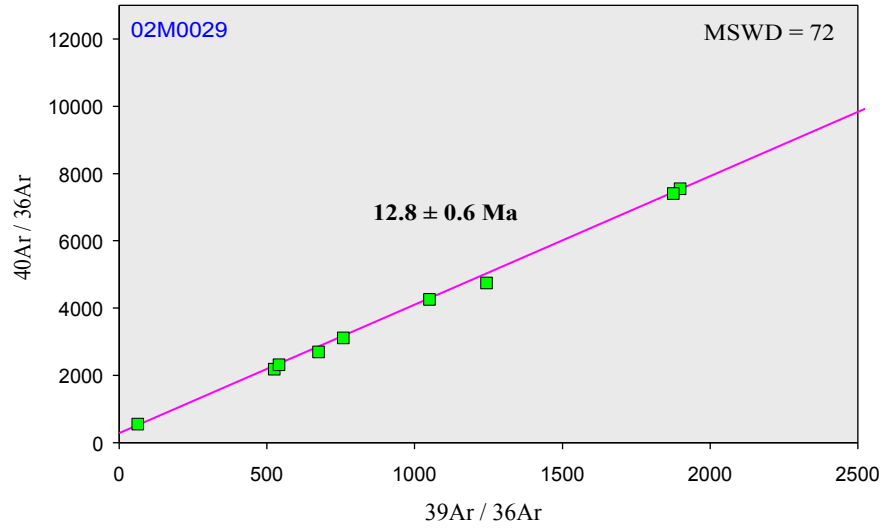


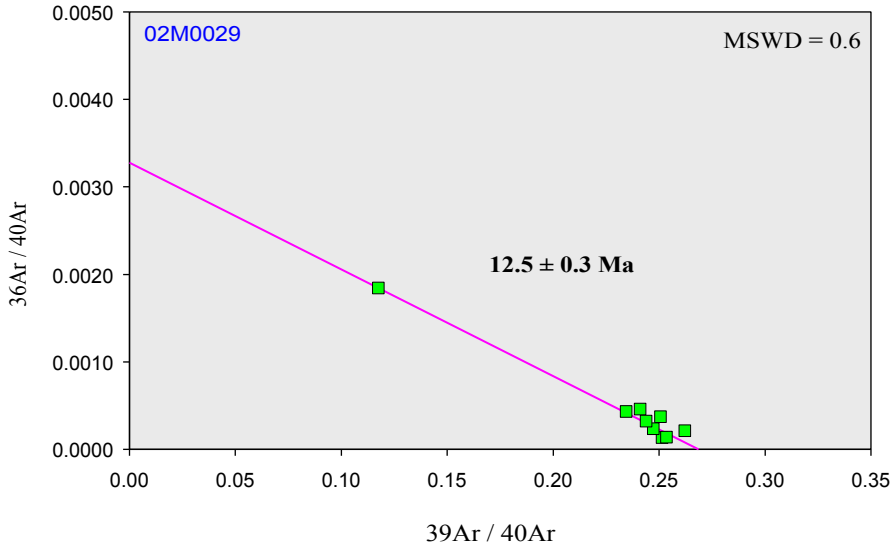




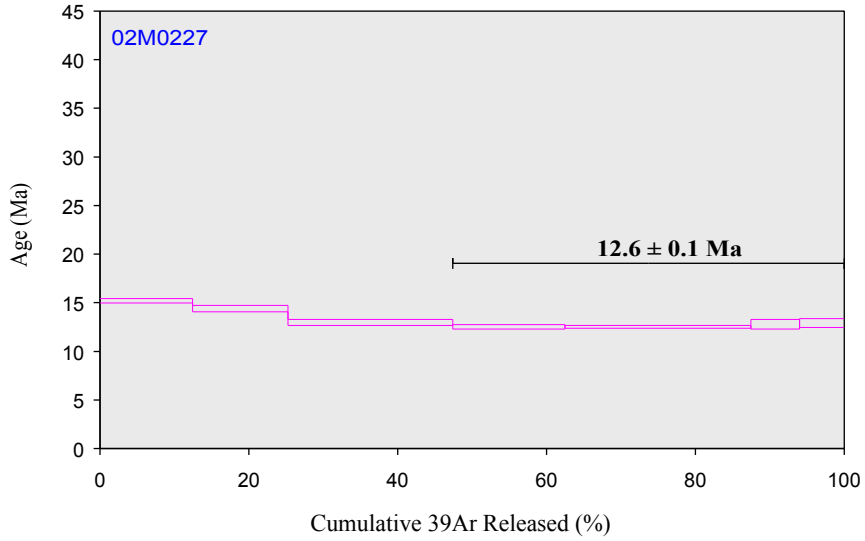
Cocos Ridge
SO144/3-62DR-1 (whole rock)

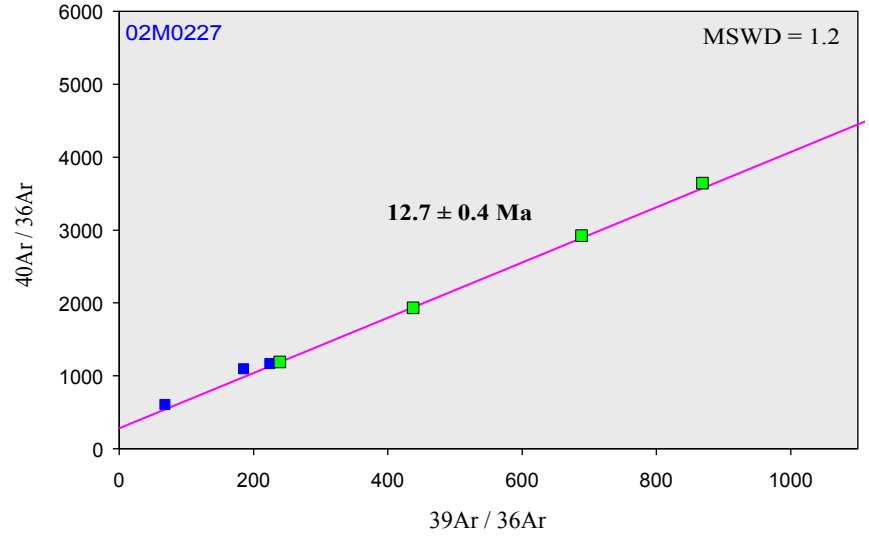


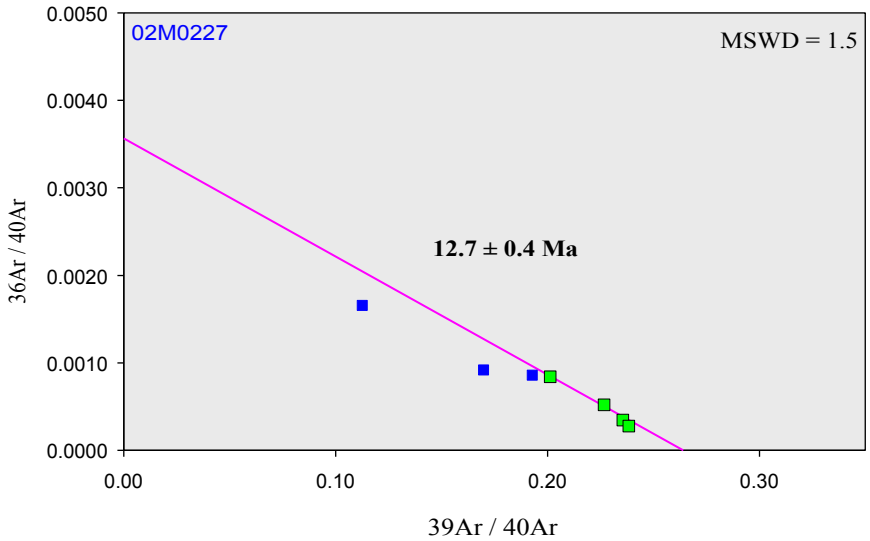




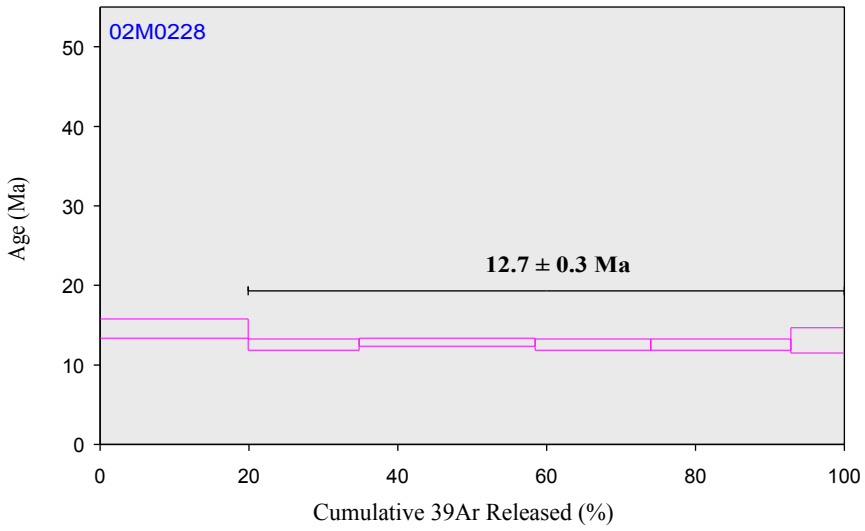
Cocos Ridge
SO144/3-62DR-1 (whole rock)

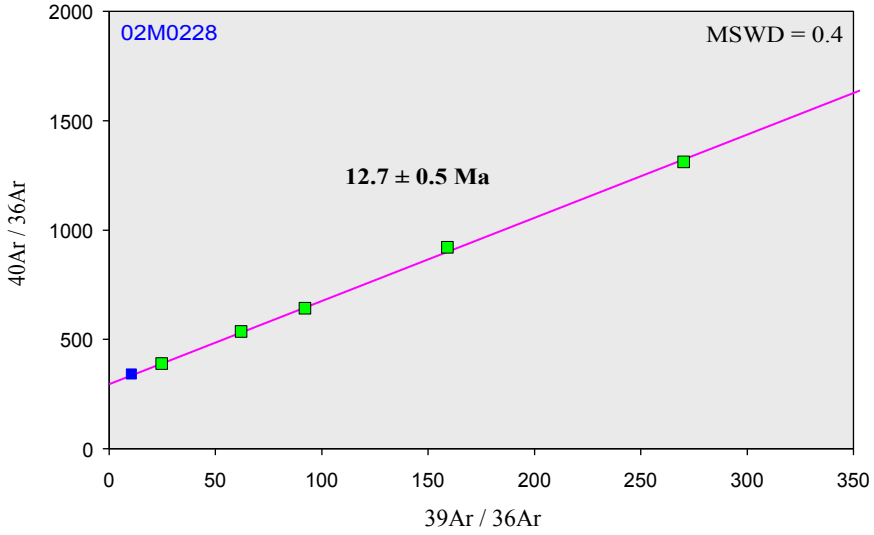


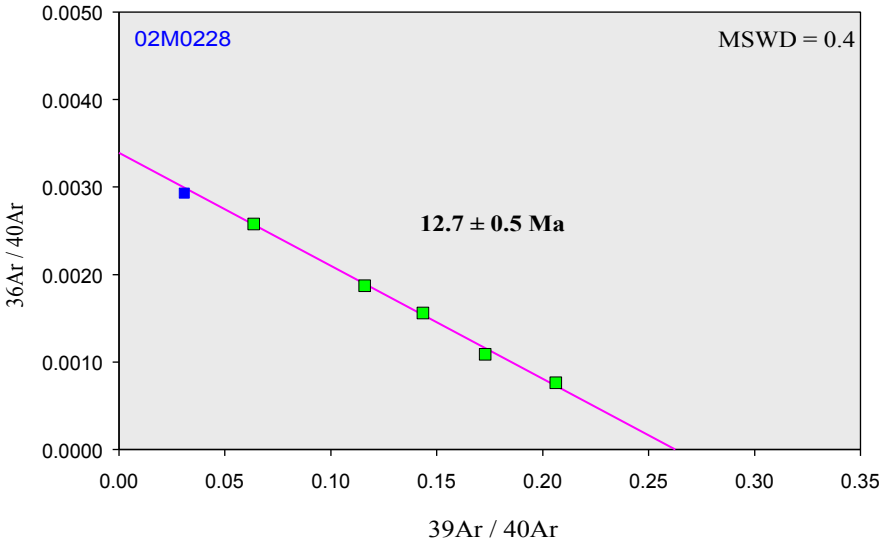




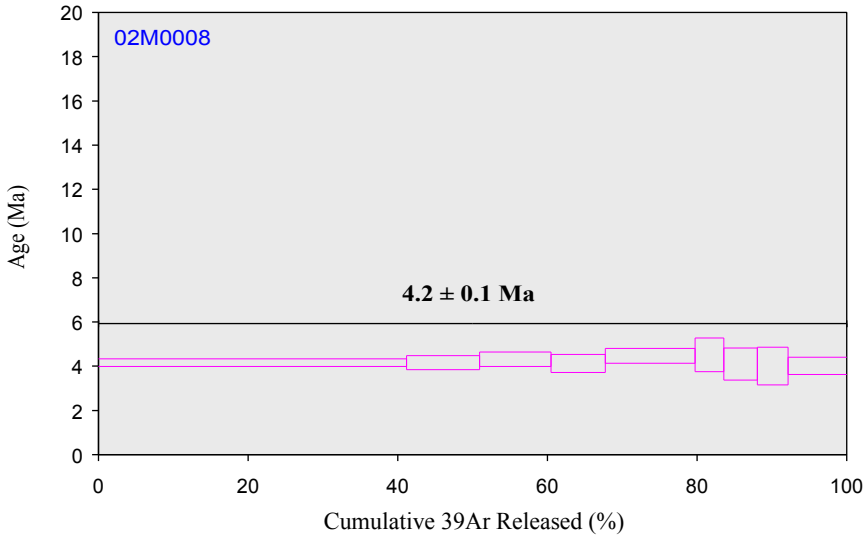
Cocos Ridge
SO144/3-63aDR-1 (whole rock)

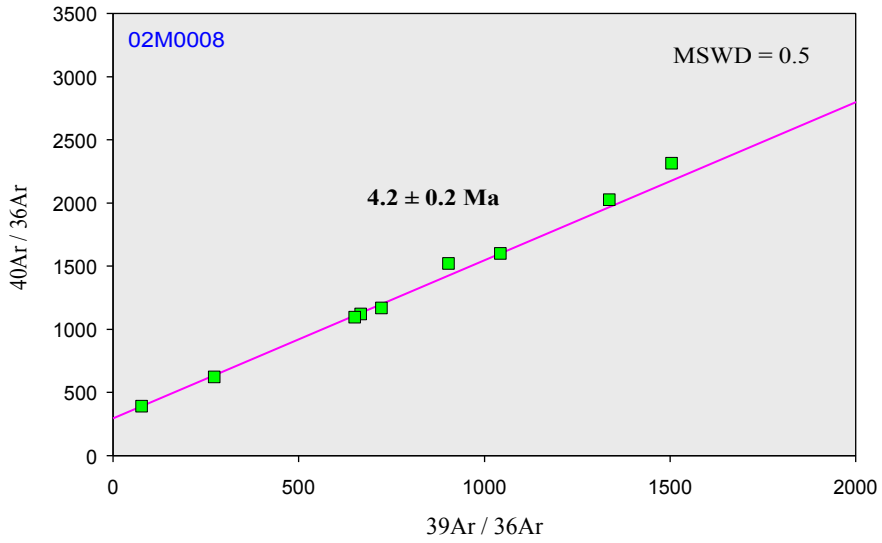


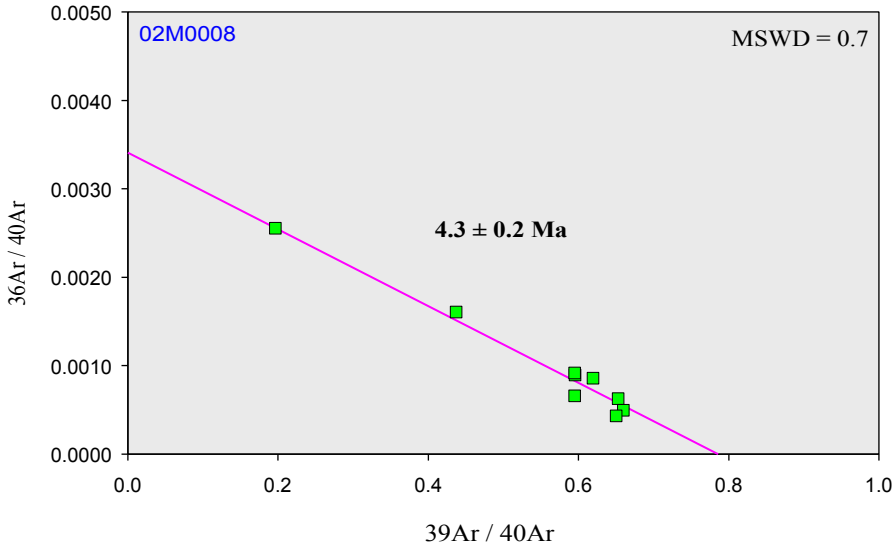




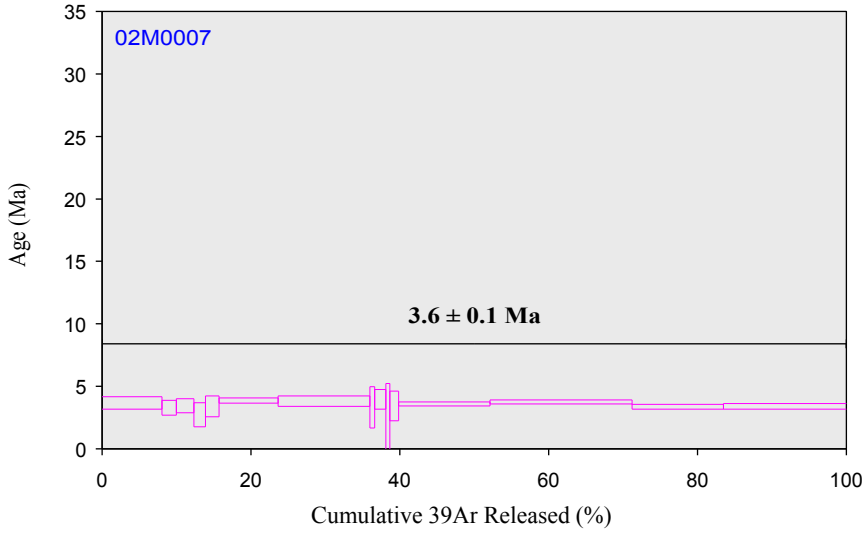
Cocos Ridge
SO144/3-64DR-1 (whole rock)

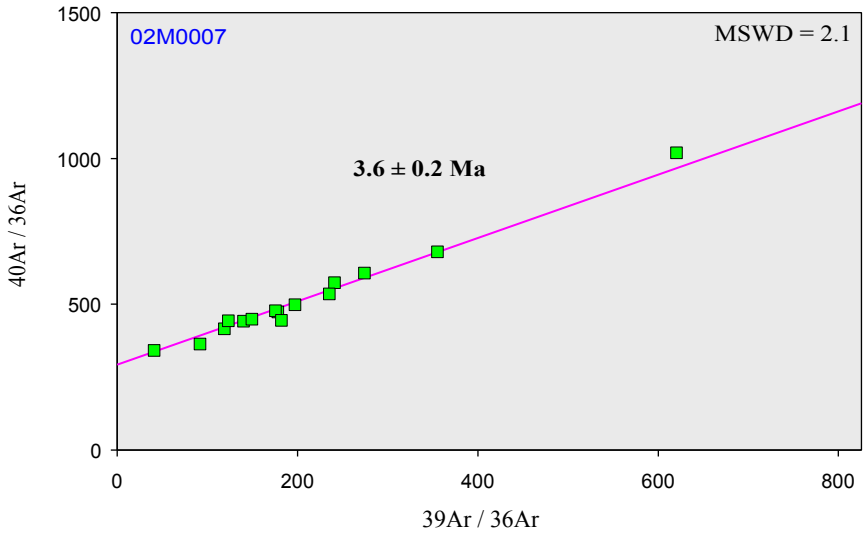


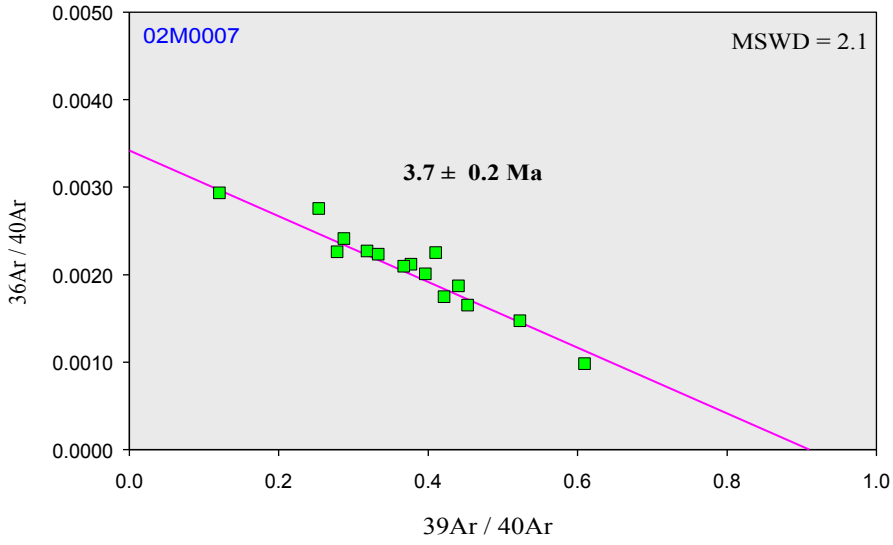




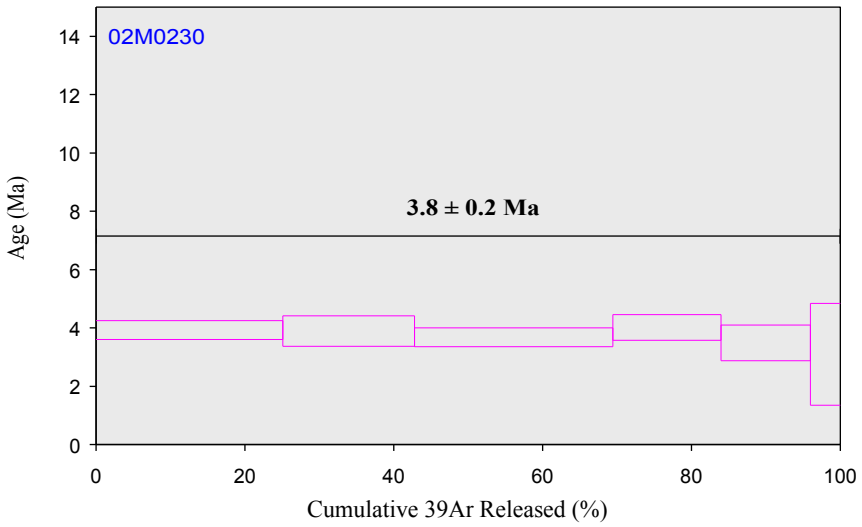
Cocos Ridge
SO144/3-65DR-1 (whole rock)

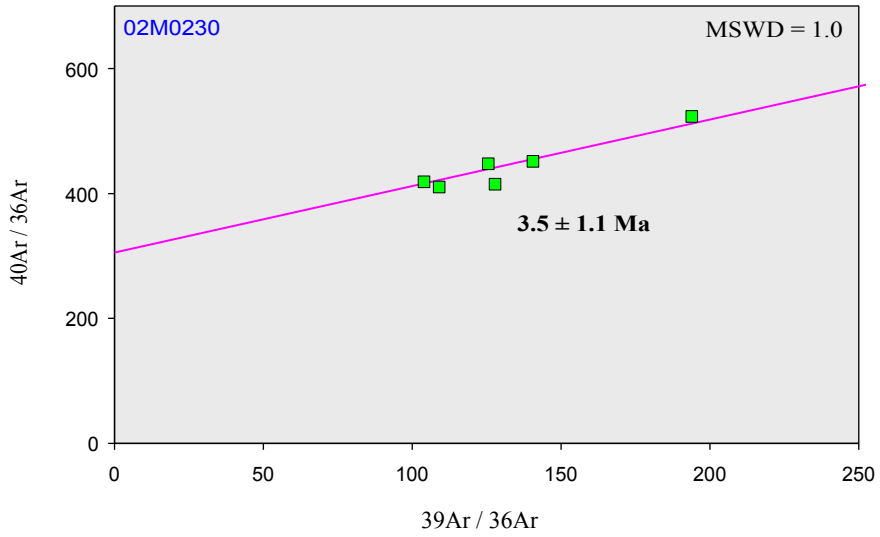


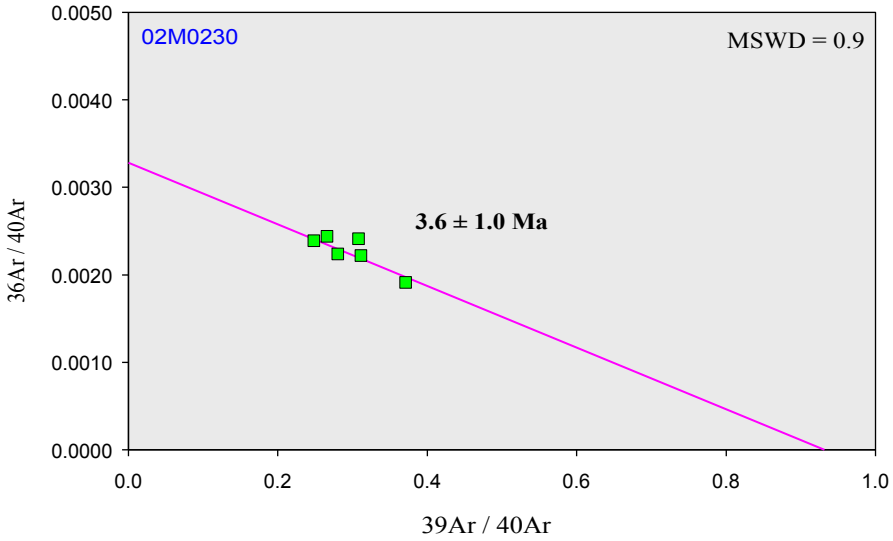




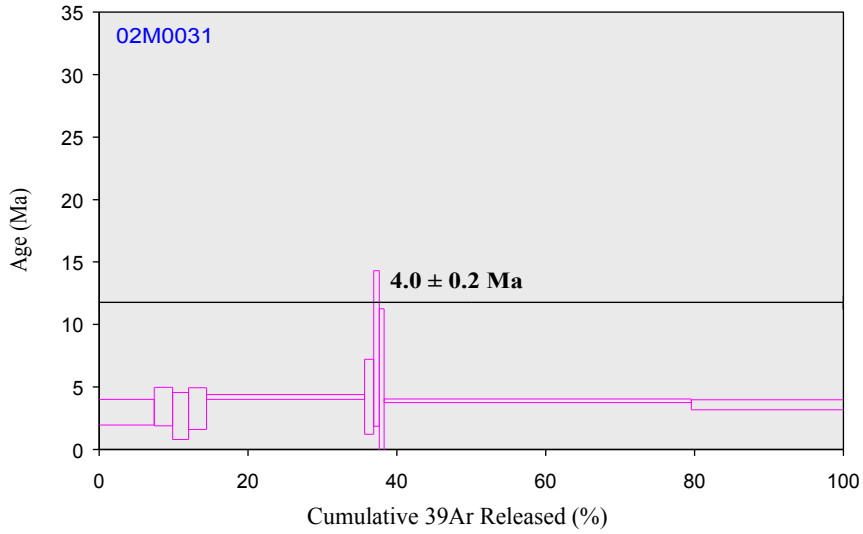
Cocos Ridge
SO144/3-65DR-1 (whole rock)

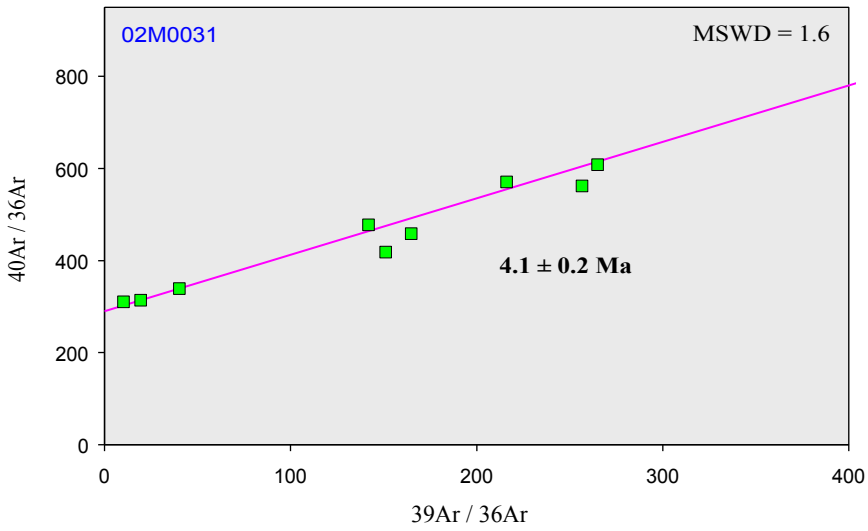


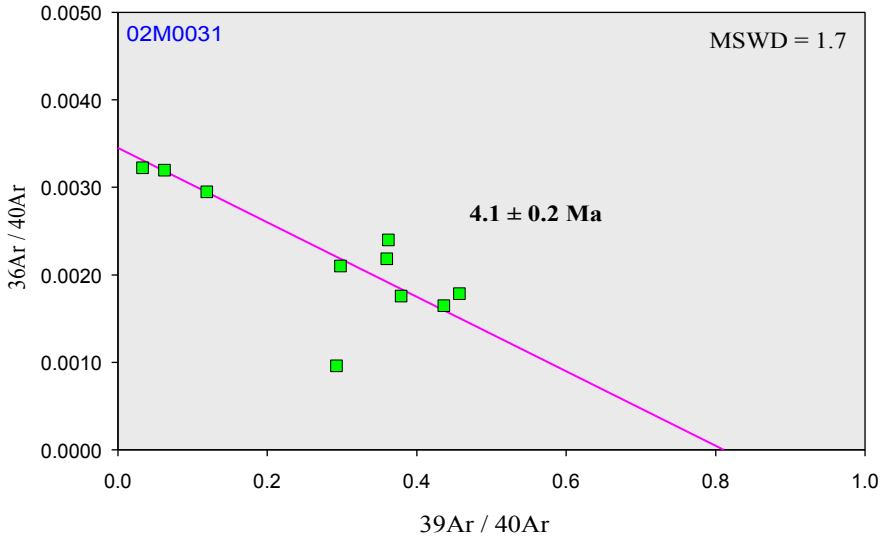




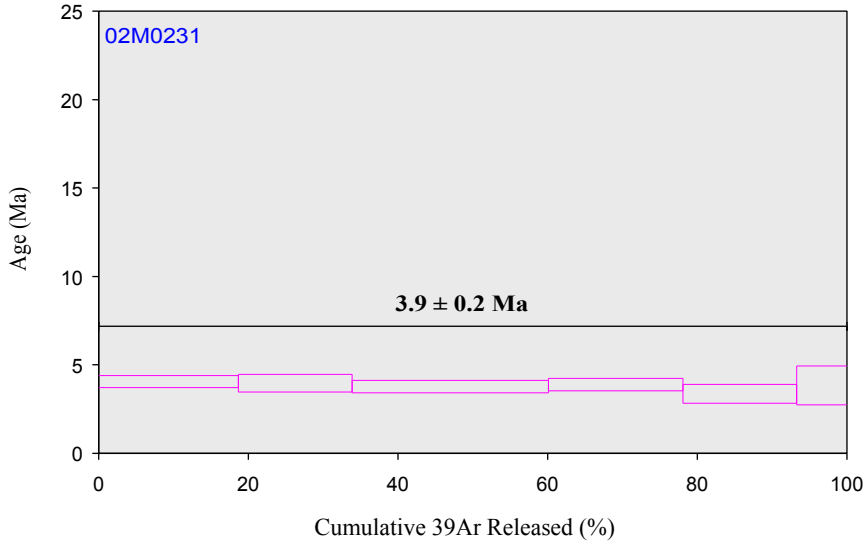
Cocos Ridge
SO144/3-65aDR-2 (whole rock)

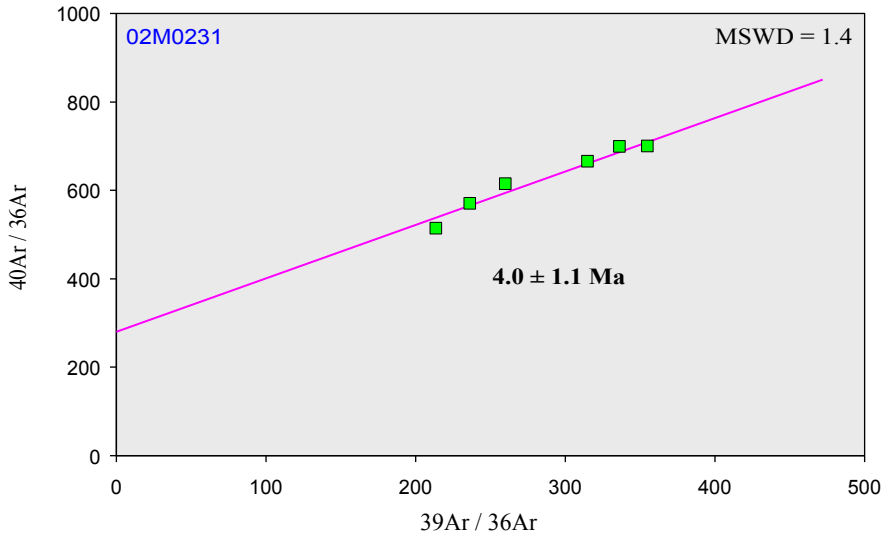


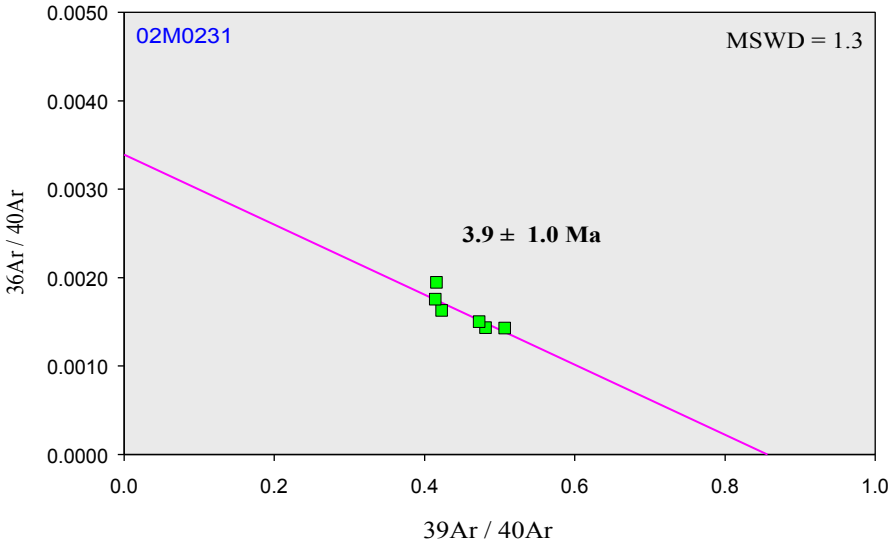




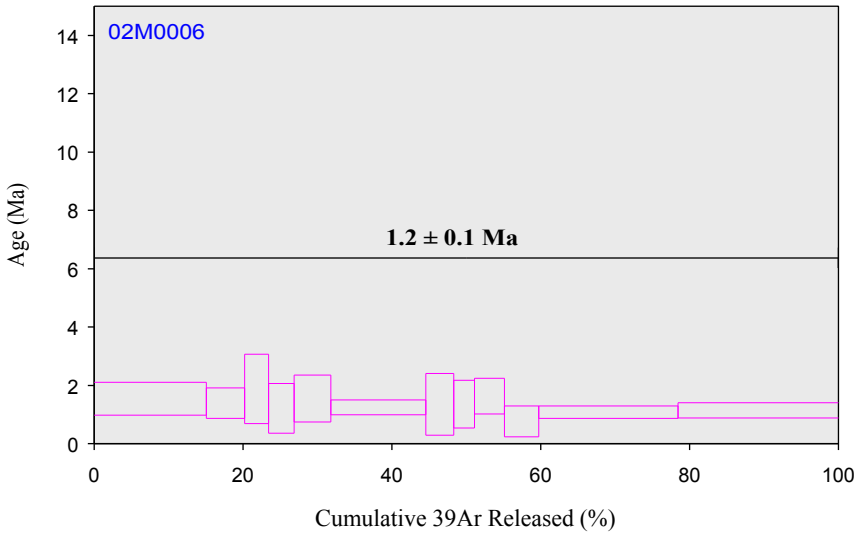
Cocos Ridge
SO144/3-65aDR-2 (whole rock)

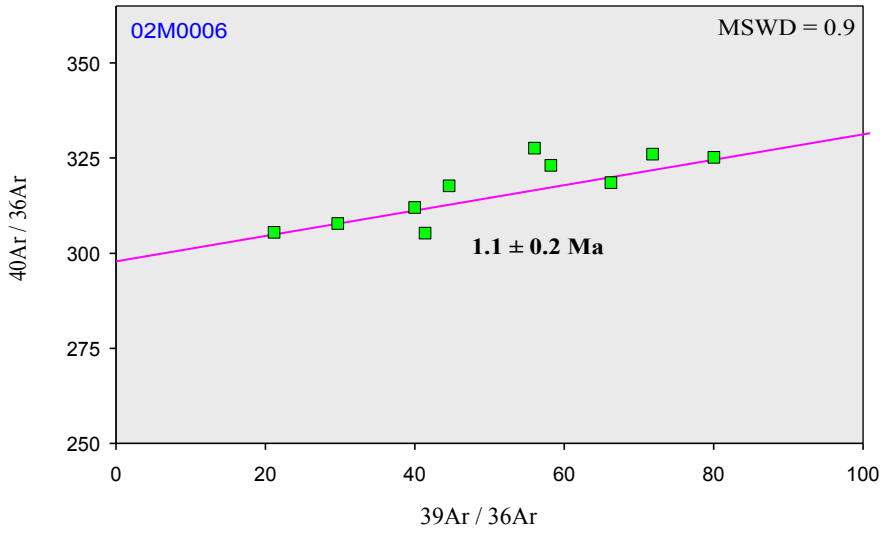


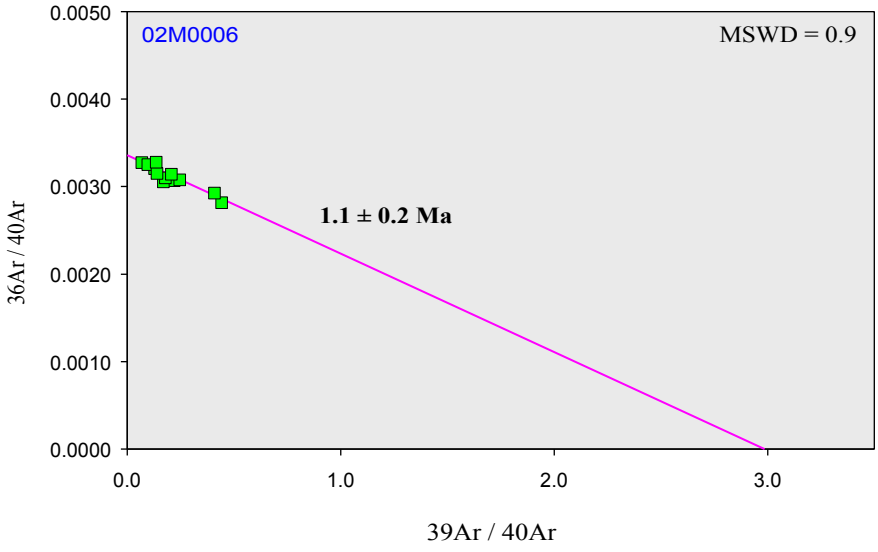




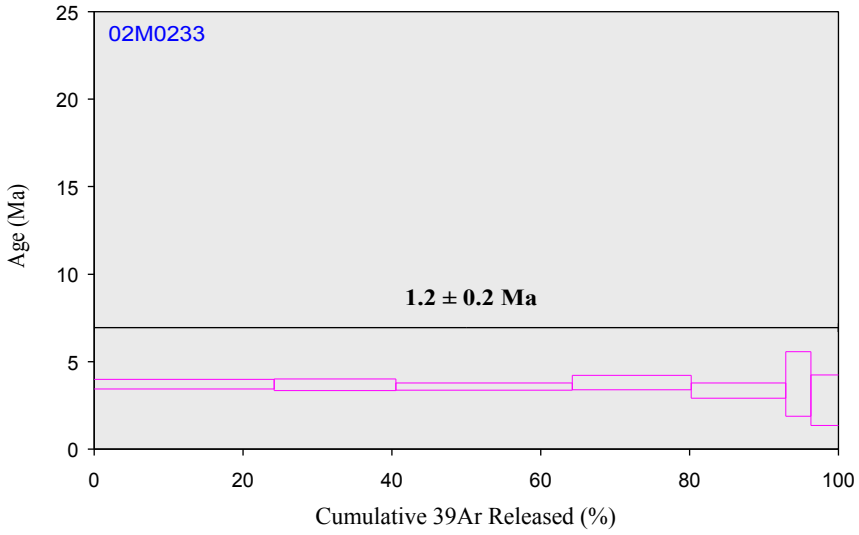
Cocos Ridge
SO144/3-67DR-1 (whole rock)

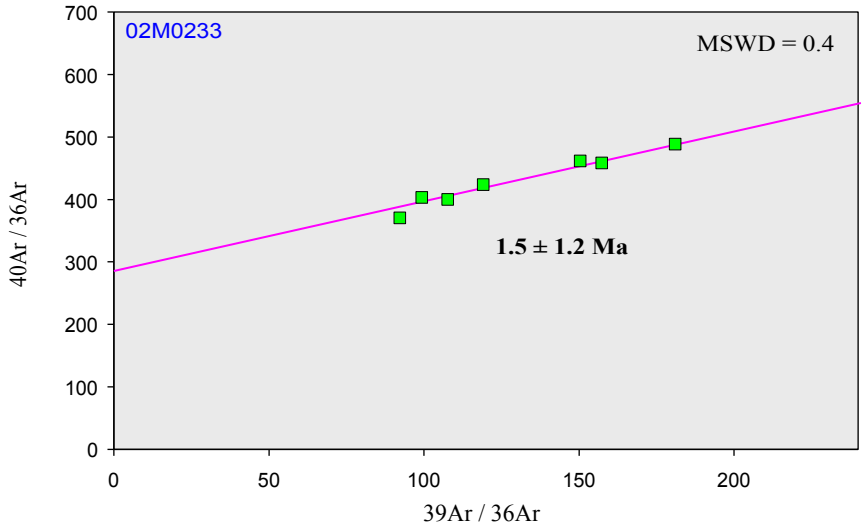


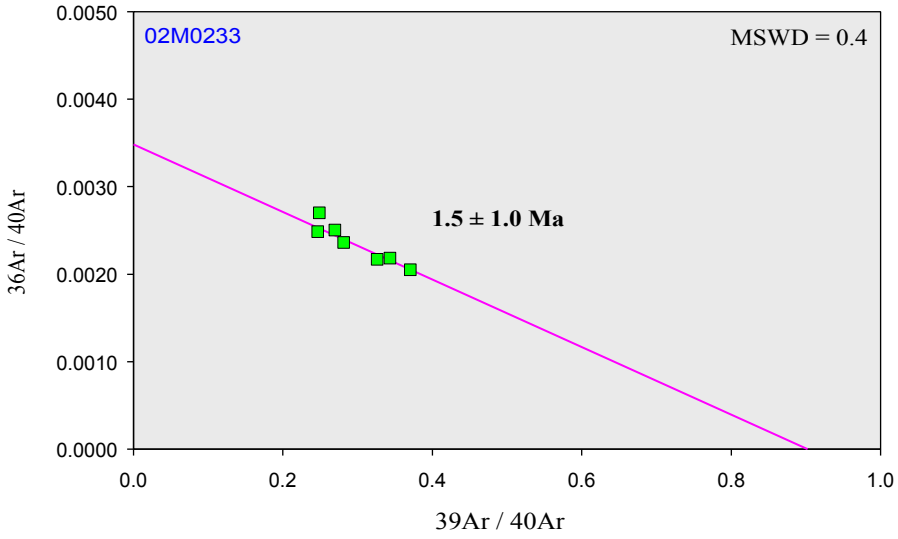




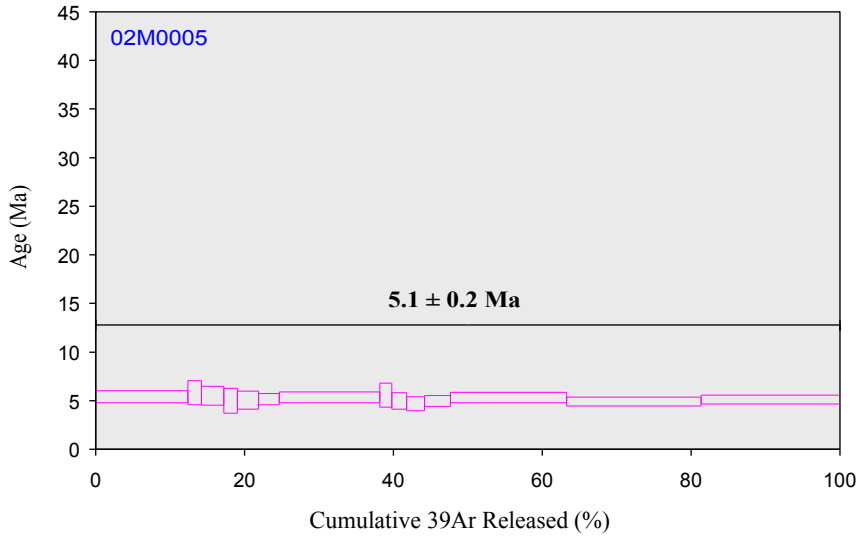
Cocos Ridge
SO144/3-67DR-1 (whole rock)

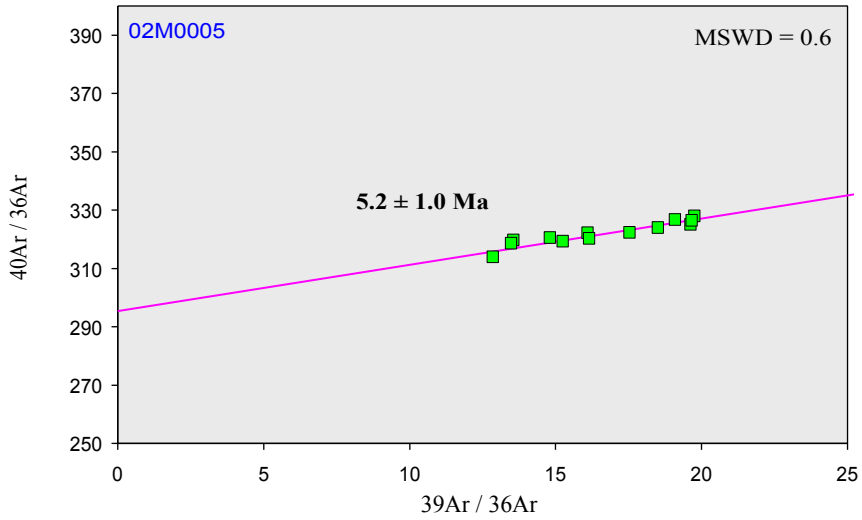


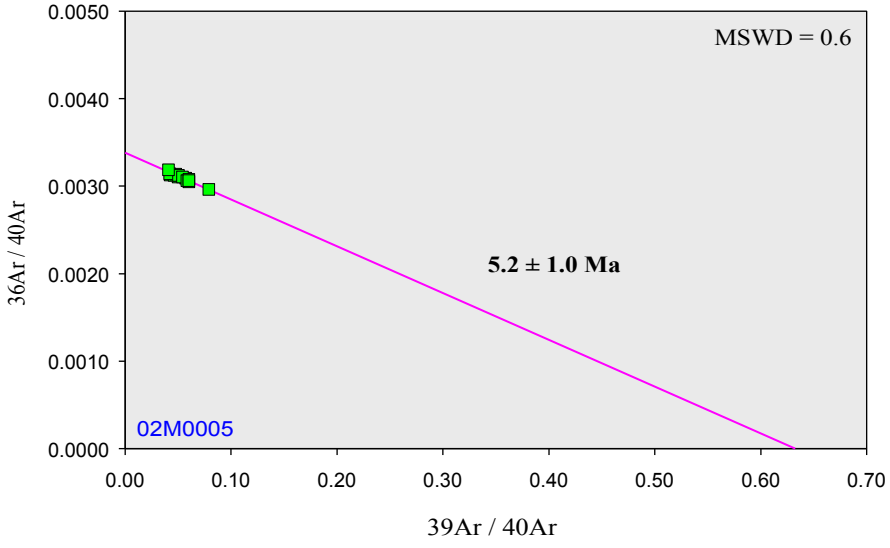




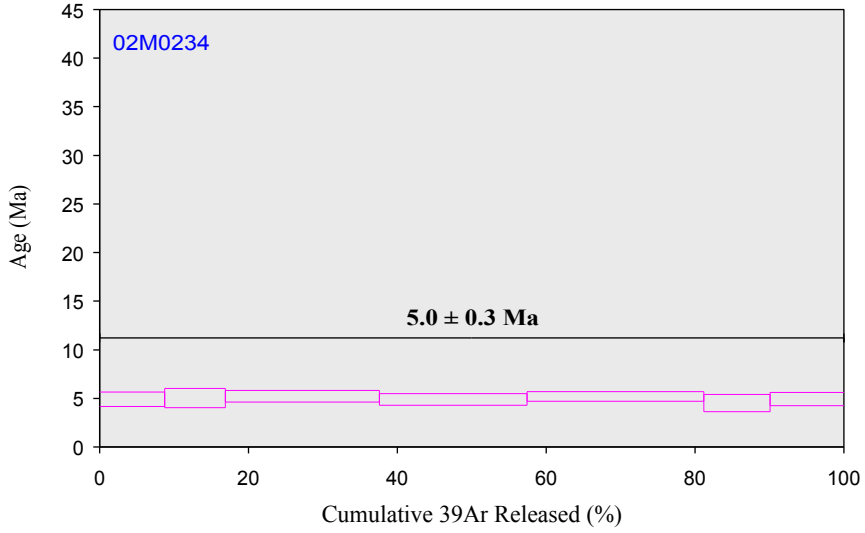
Cocos Ridge
SO144/3-69DR-1 (whole rock)

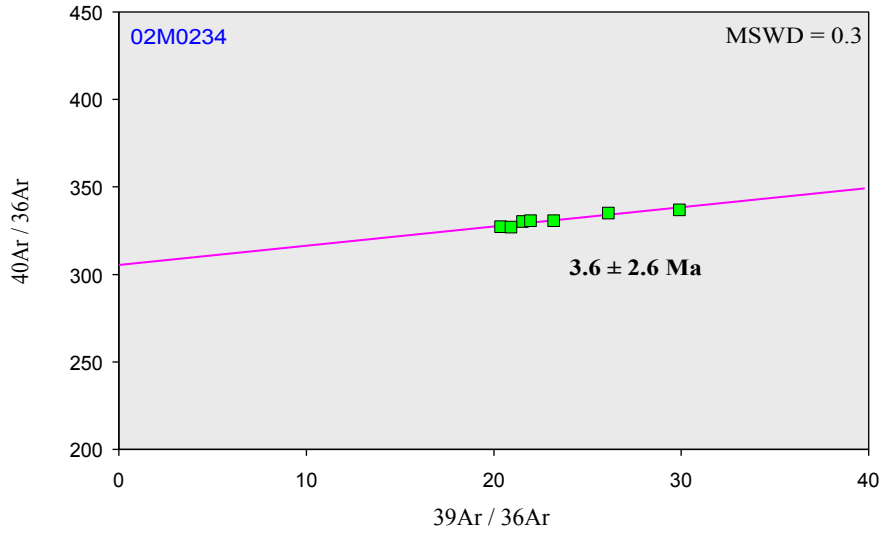


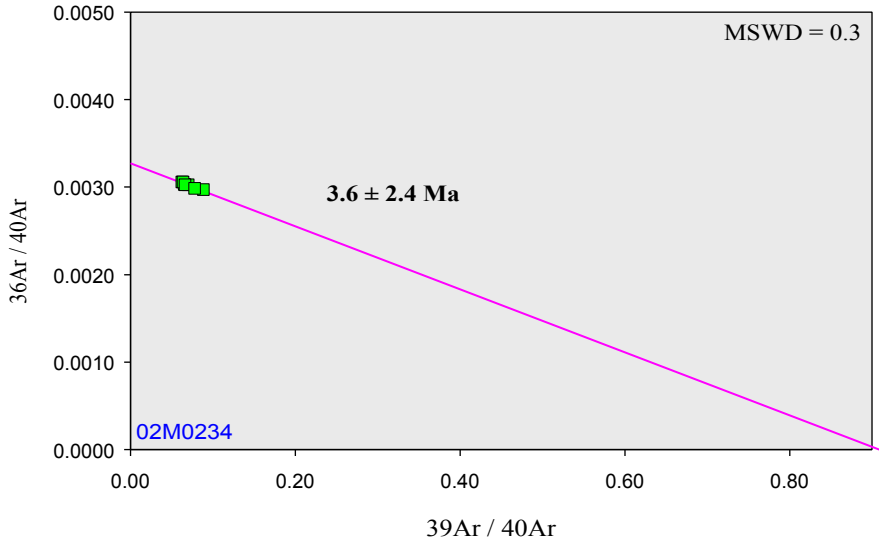




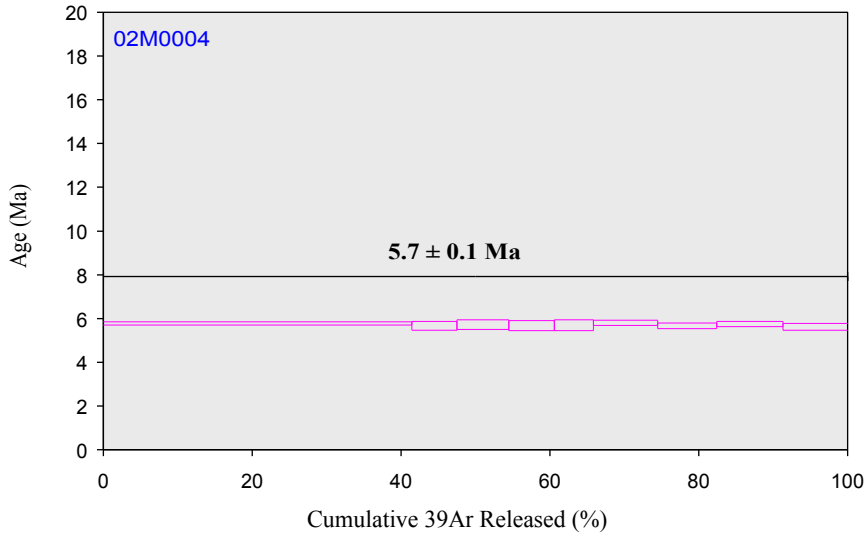
Cocos Ridge
SO144/3-69DR-1 (whole rock)

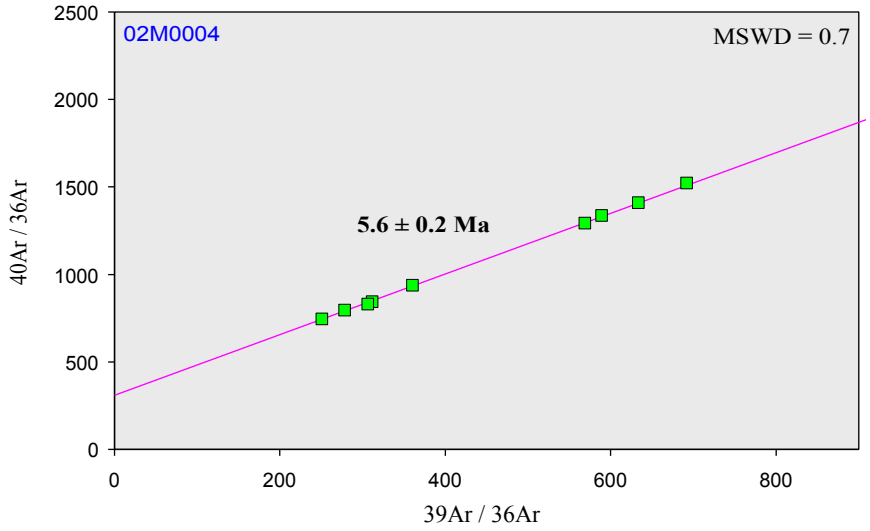


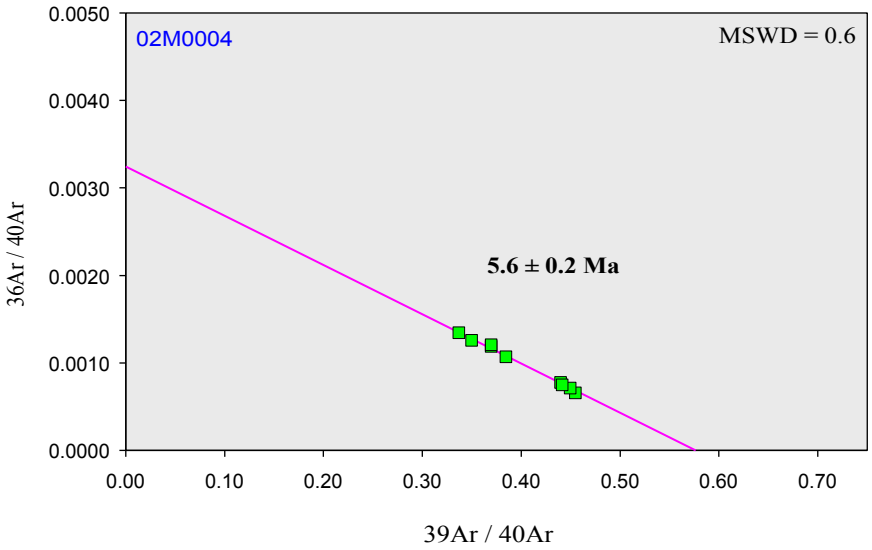




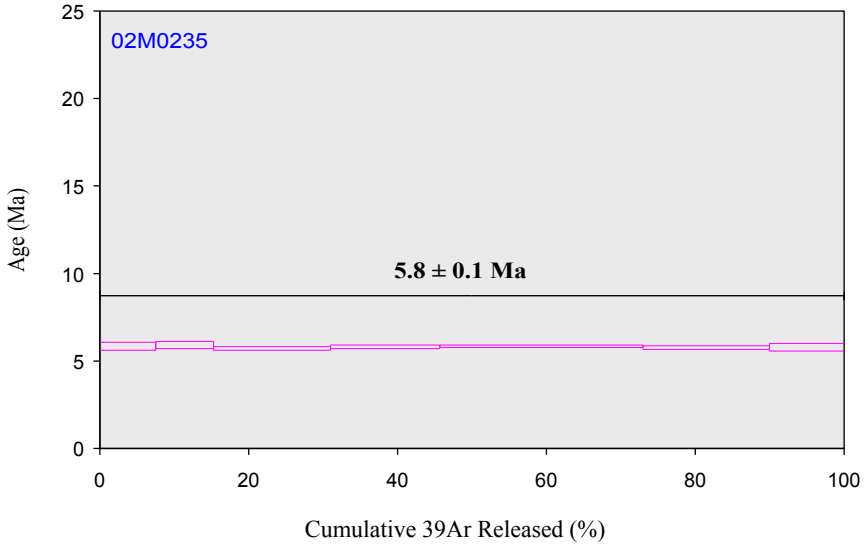
Cocos Ridge
SO144/3-70bDR-1 (whole rock)

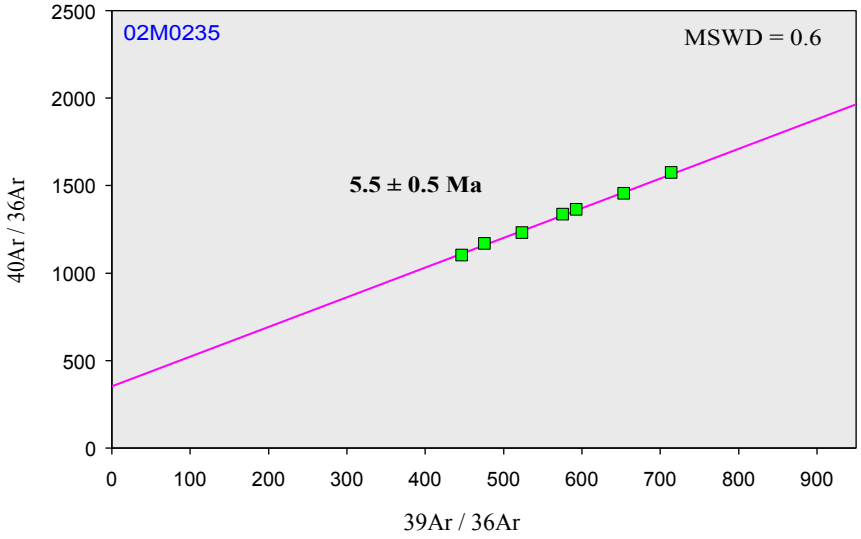


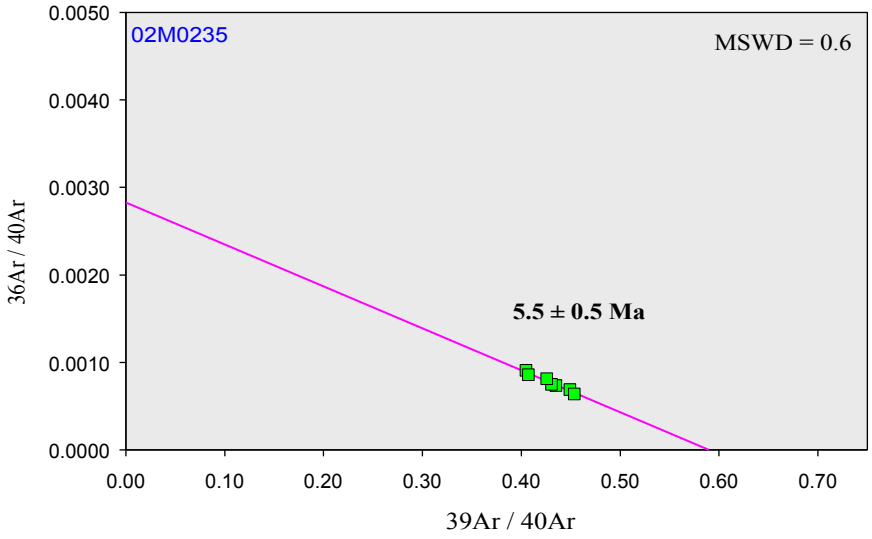




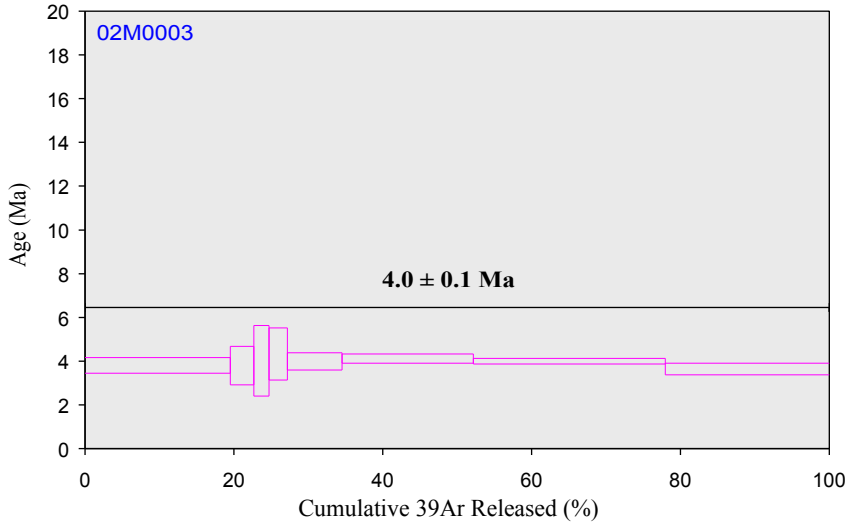
Cocos Ridge
SO144/3-70bDR-1 (whole rock)

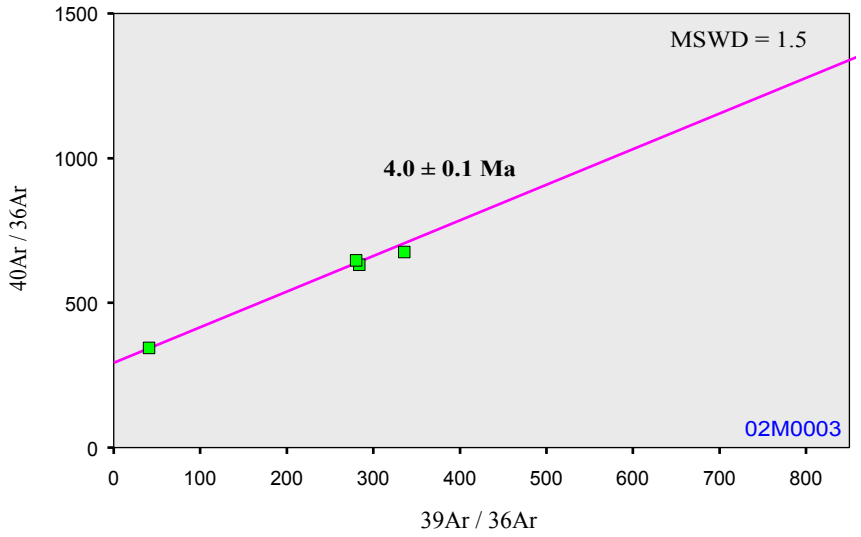


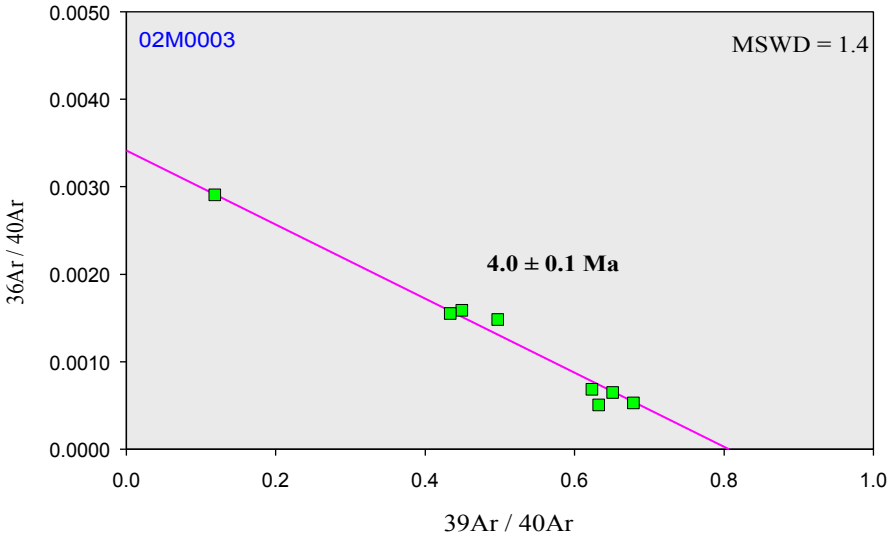




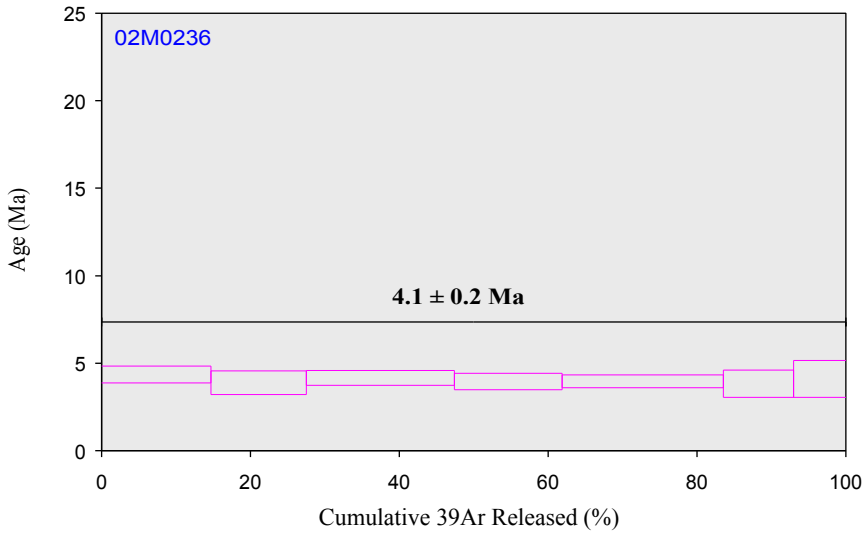
Cocos Ridge
SO144/3-71DR-1 (whole rock)

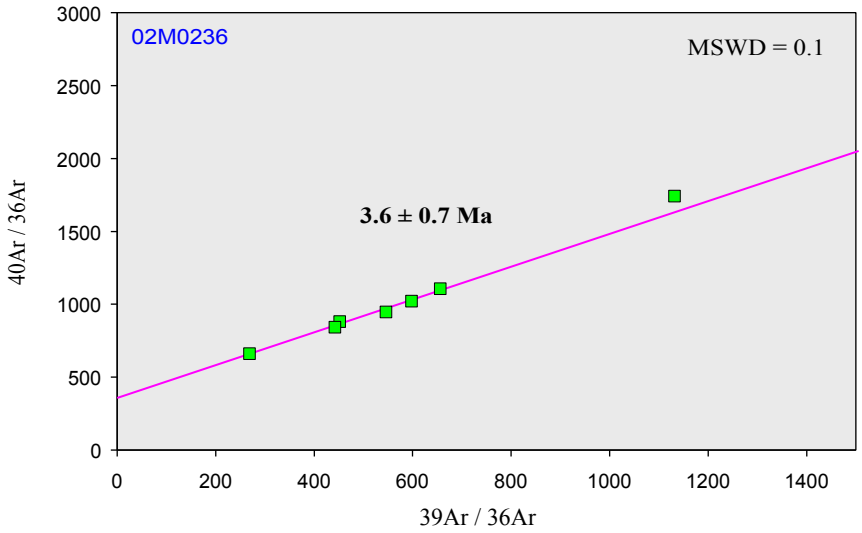


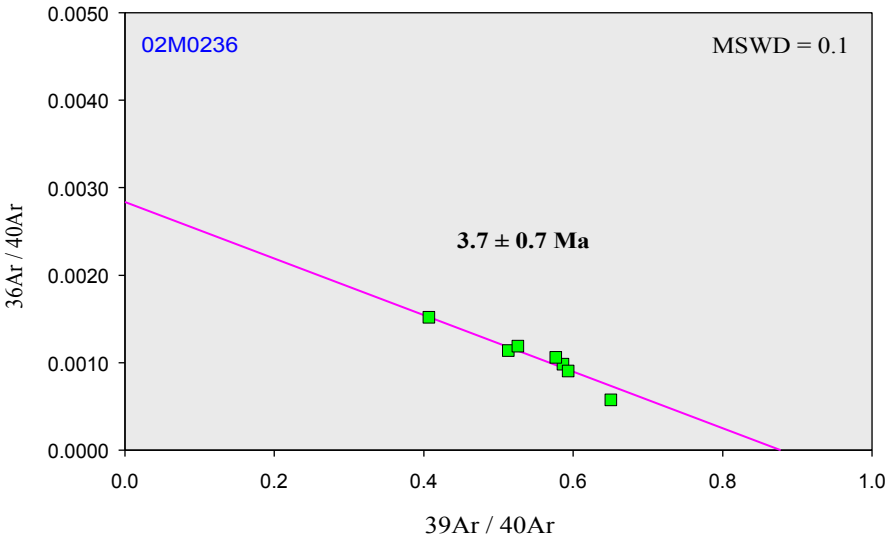




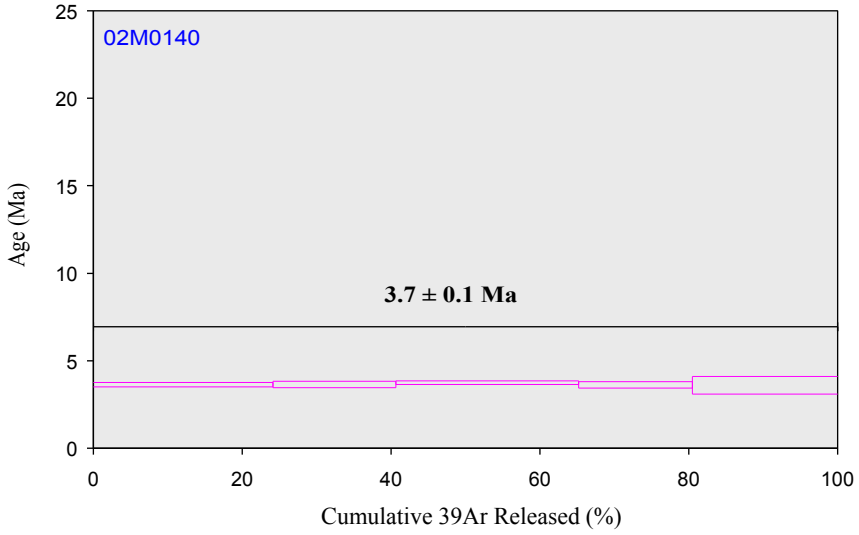
Cocos Ridge
SO144/3-71DR-1 (whole rock)

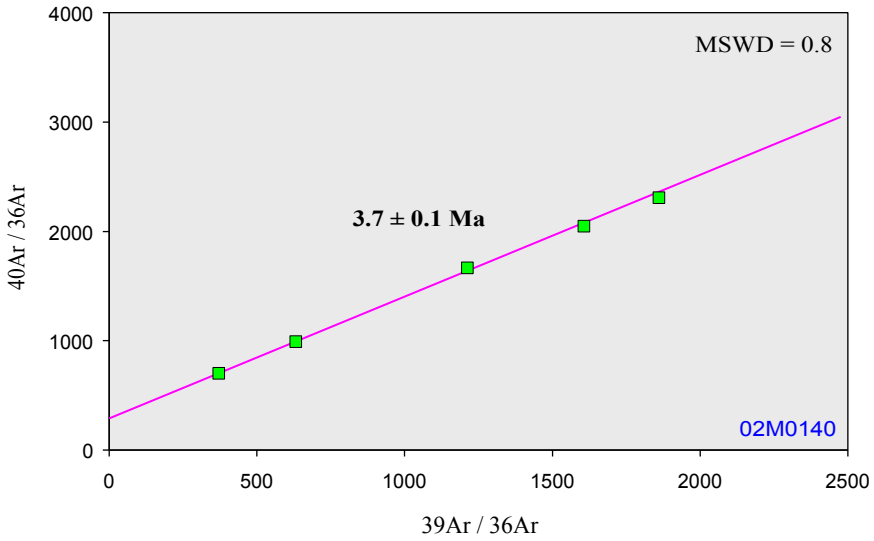


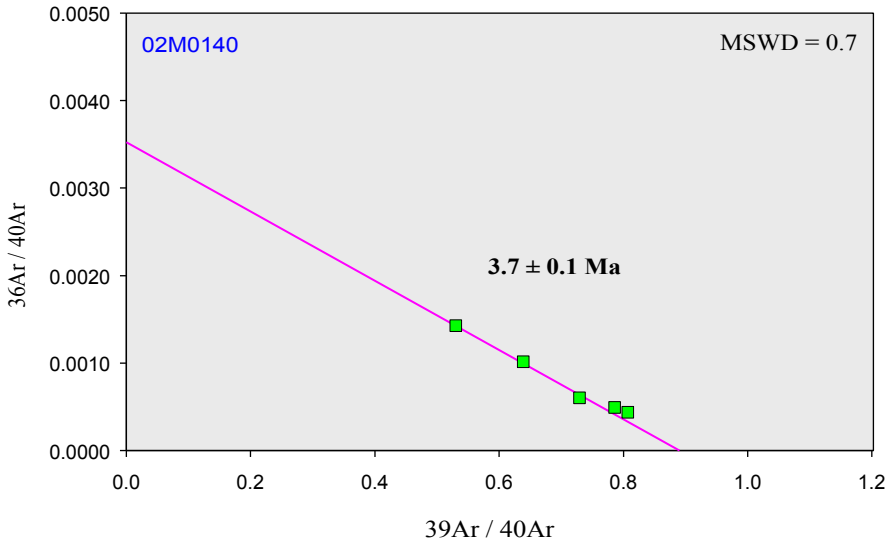




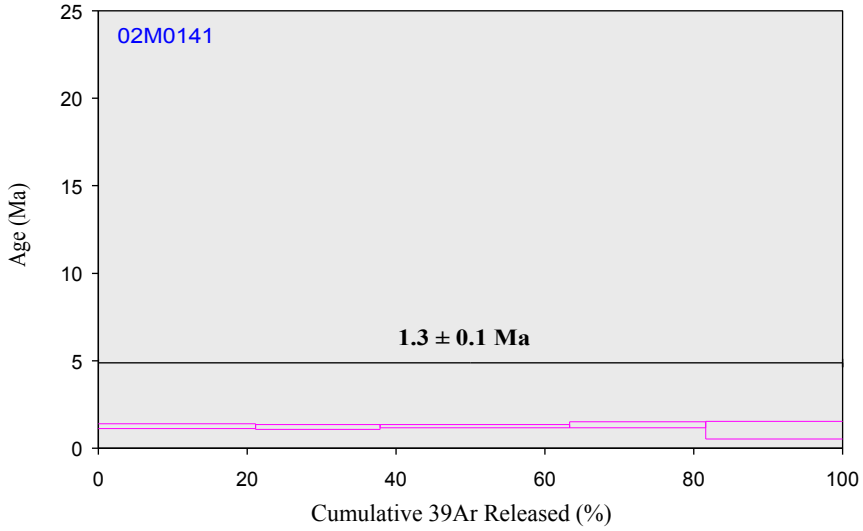
Cocos Ridge
SO144/3-71aDR-1 (whole rock)

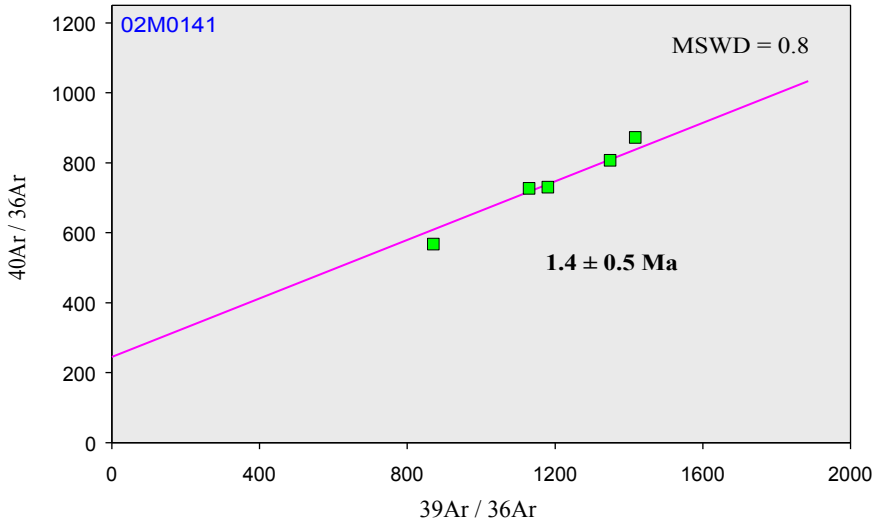


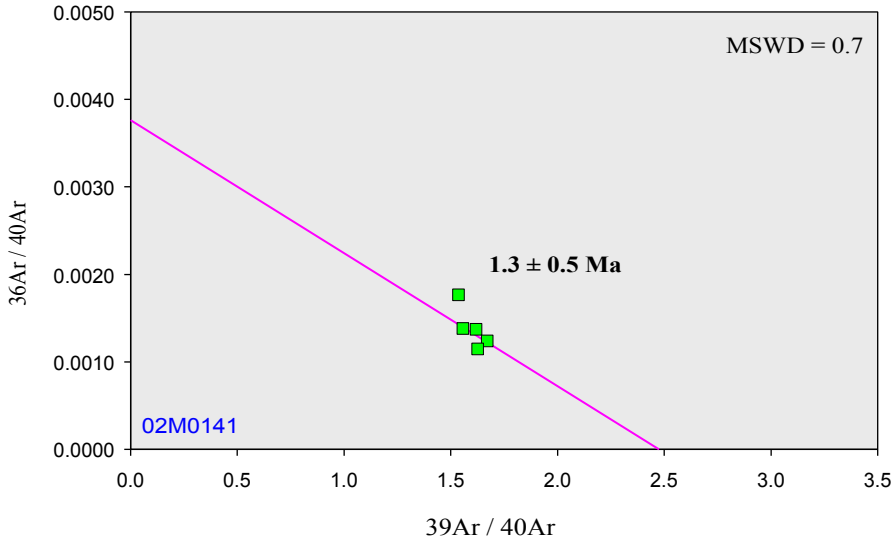




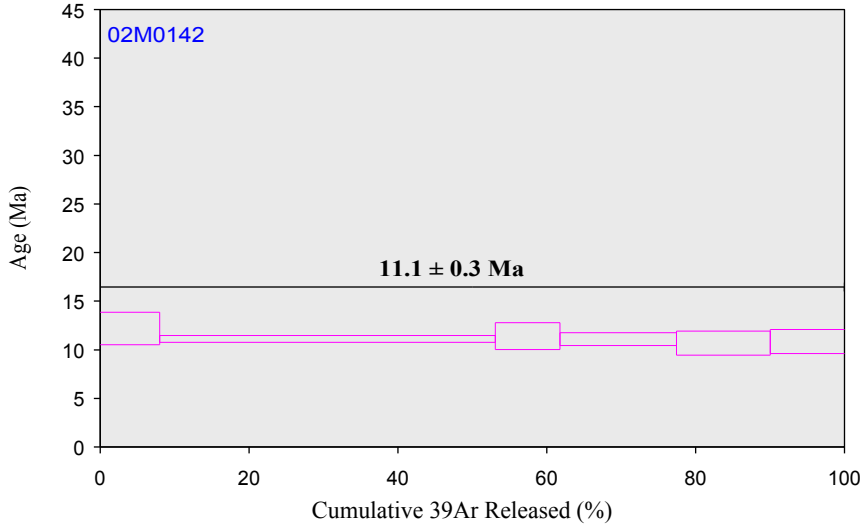
Cocos Ridge
SO144/3-72aDR-1 (whole rock)

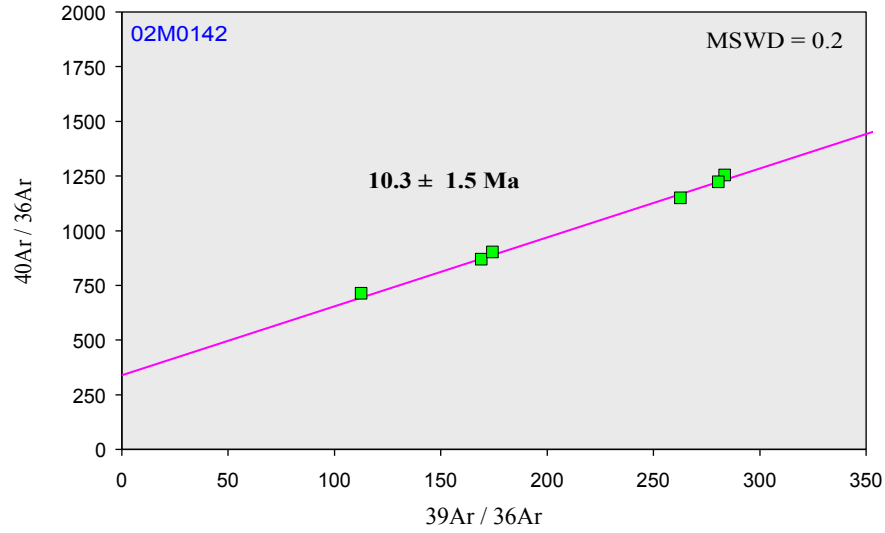


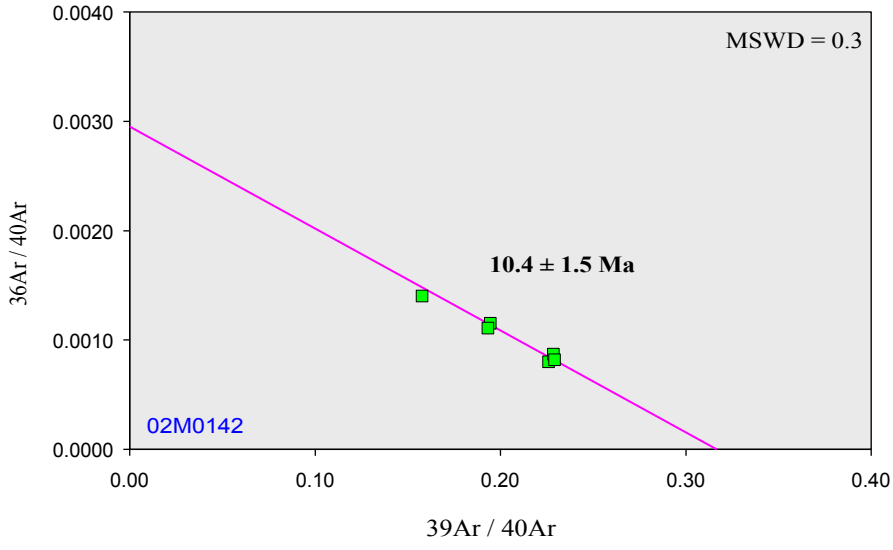




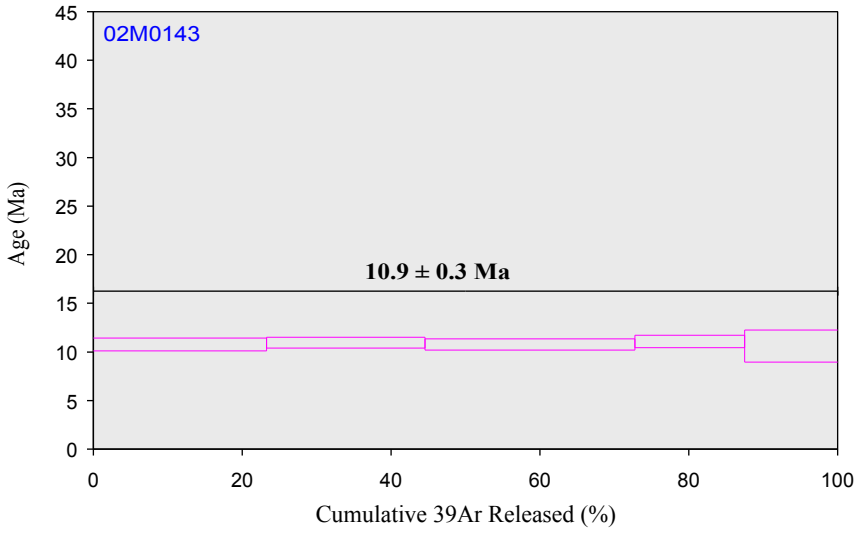
Cocos Ridge
SO144/3-73DR-1 (whole rock)

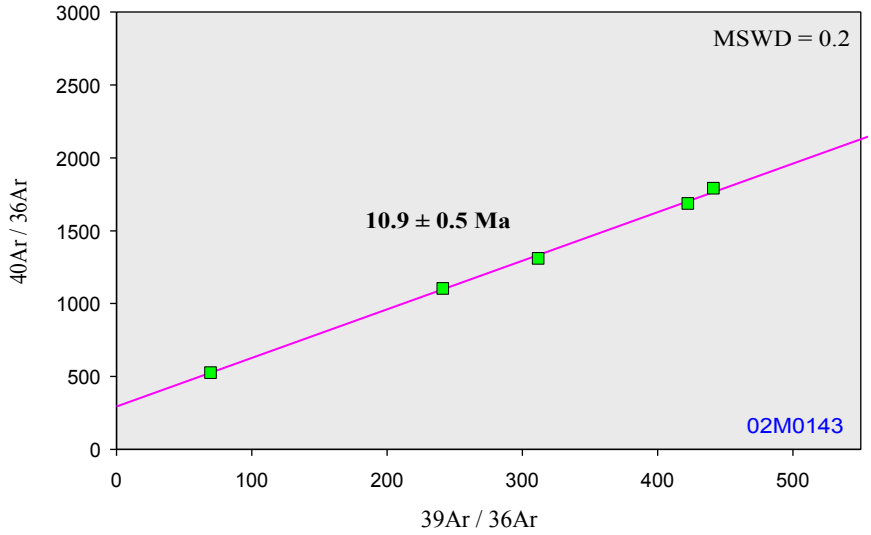


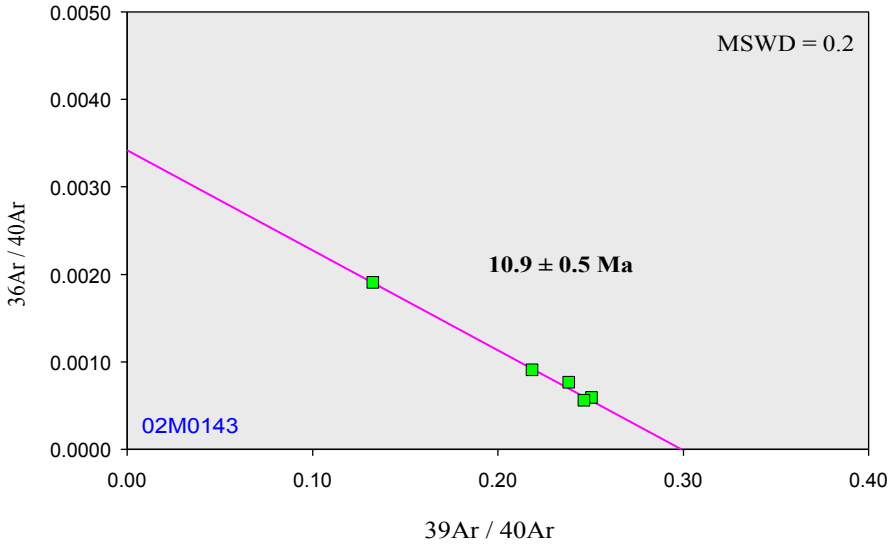




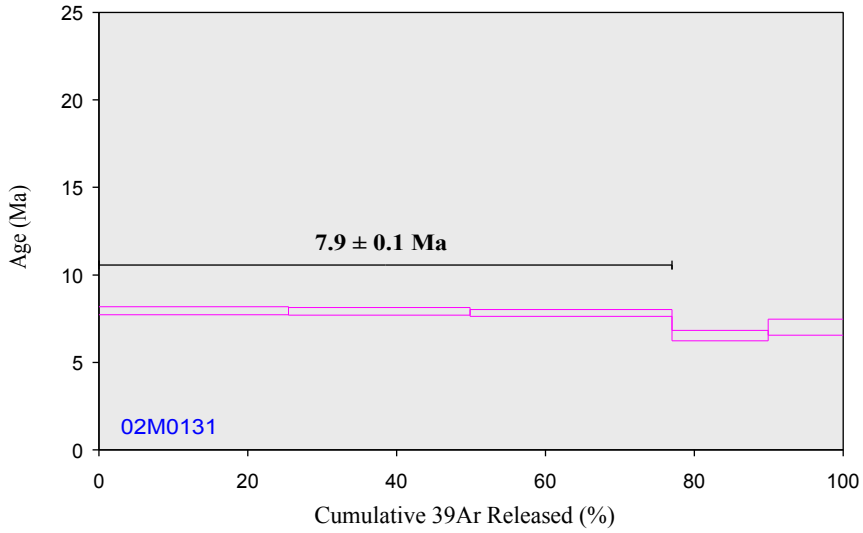
Cocos Ridge
SO144/3-74DR-1 (whole rock)

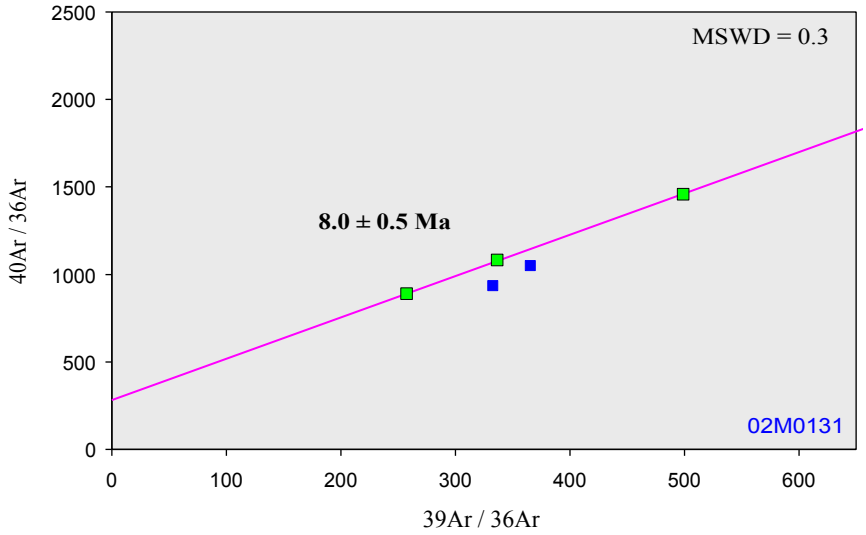


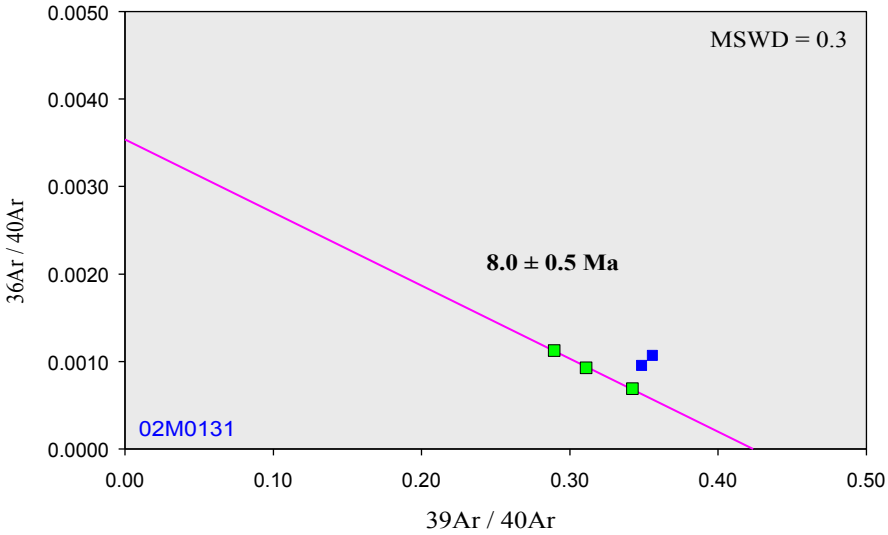




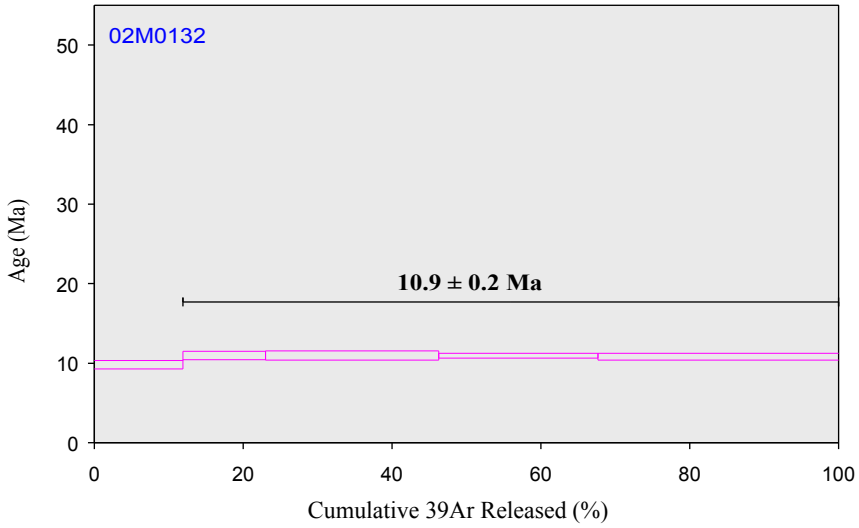
Cocos Ridge
SO144/3-77DR-1 (whole rock)

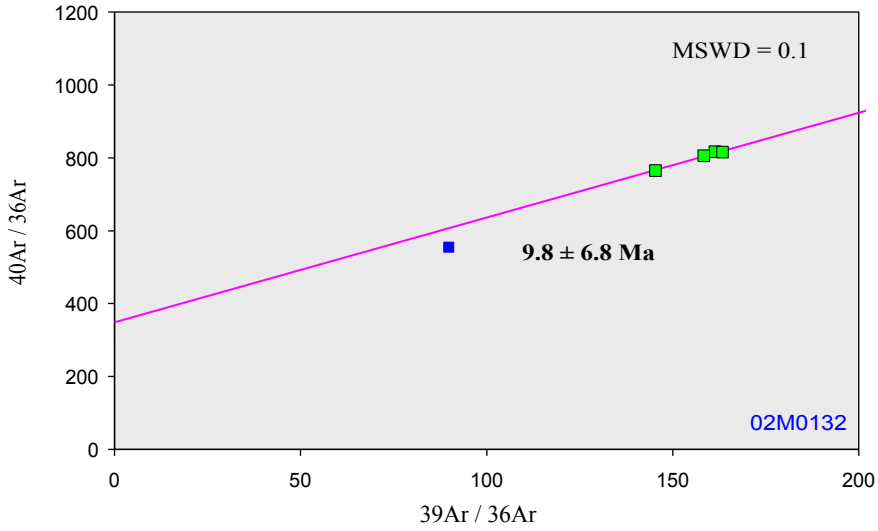


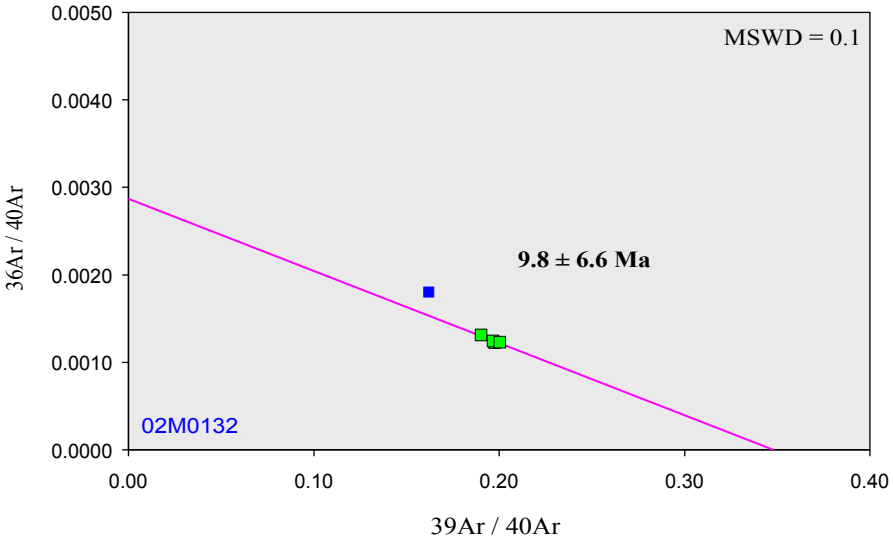




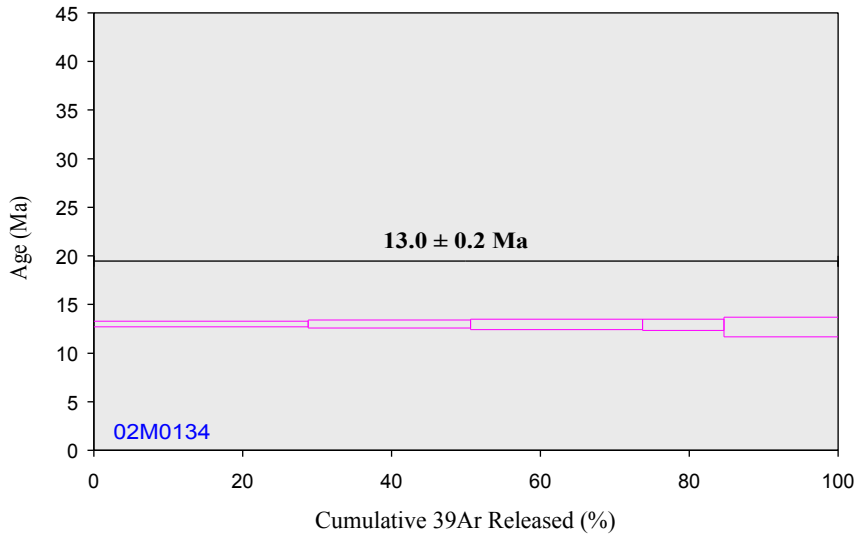
Cocos Ridge
SO144/3-77aDR-1 (whole rock)

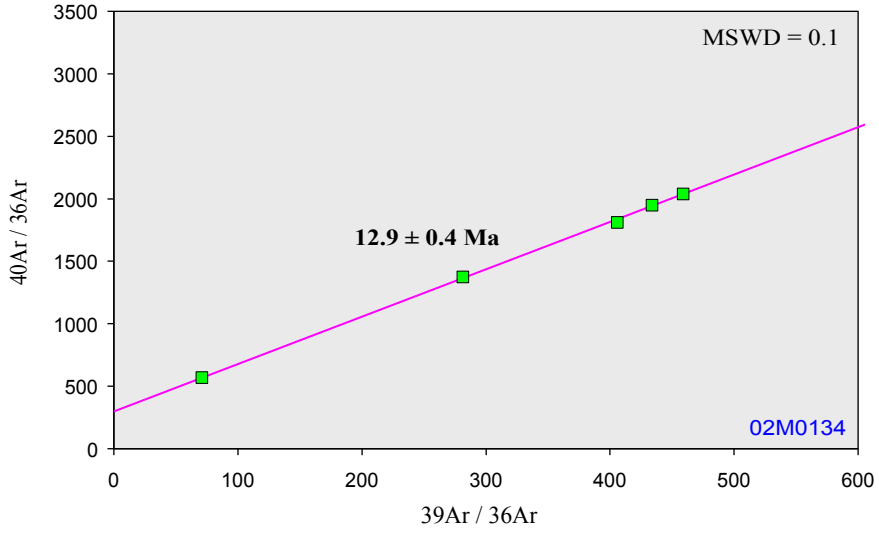


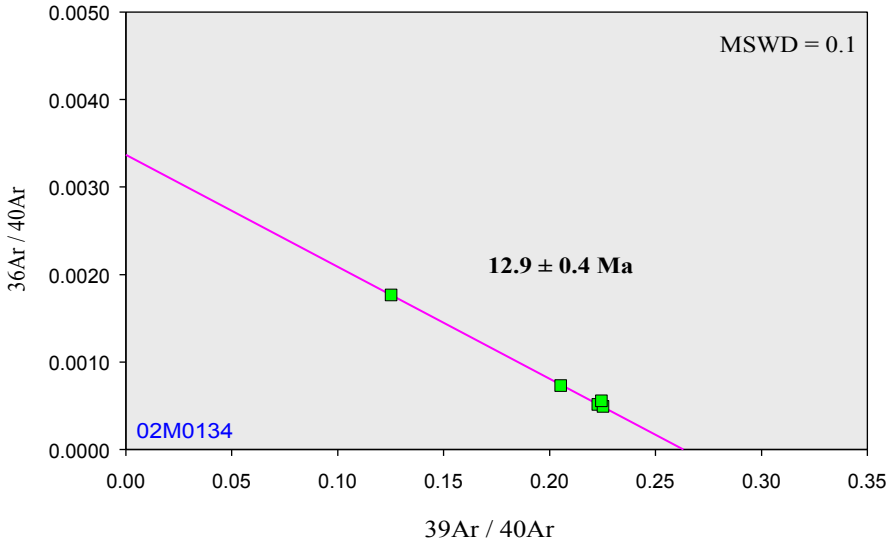




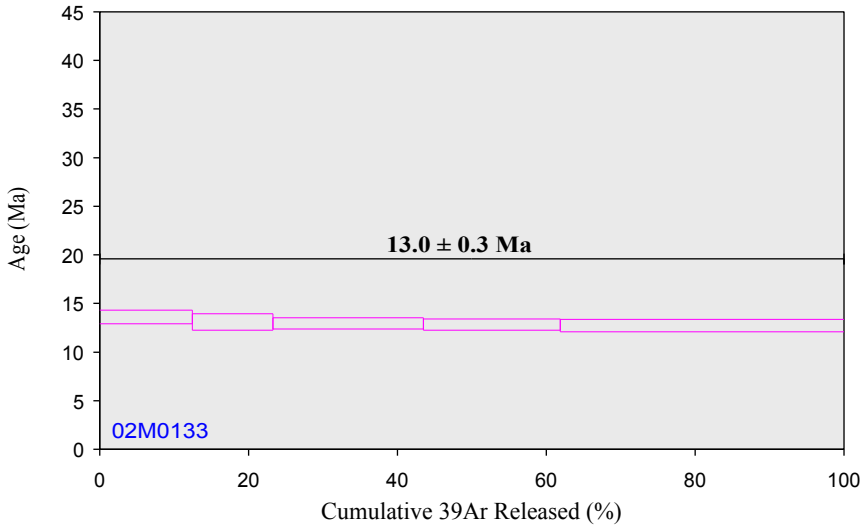
Cocos Ridge
SO144/3-79DR-1 (whole rock)

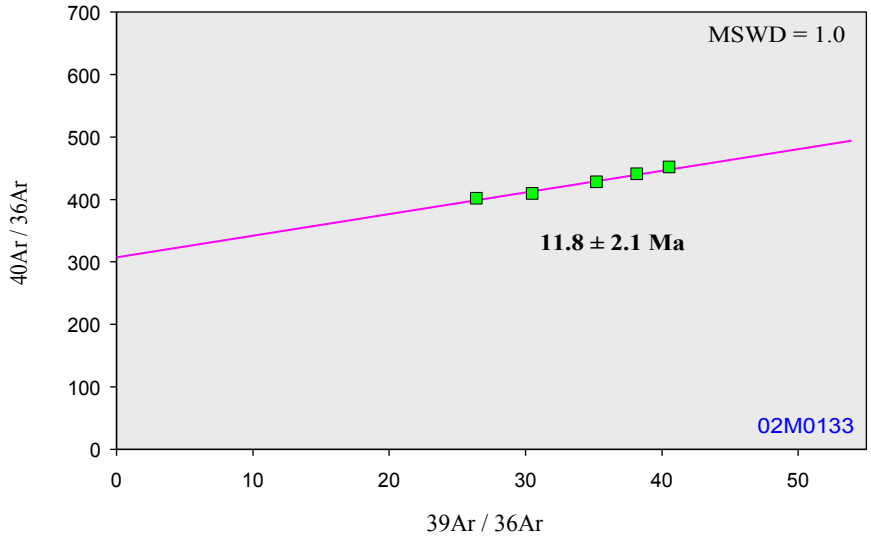


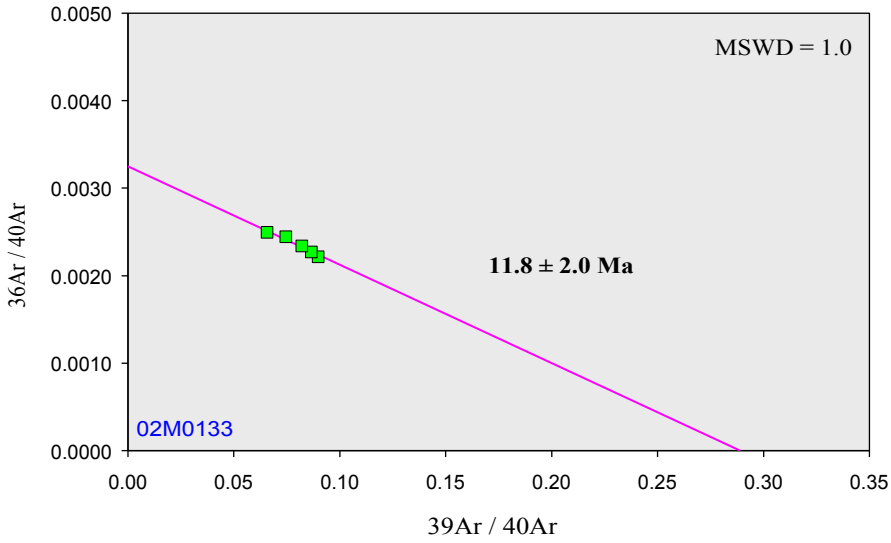




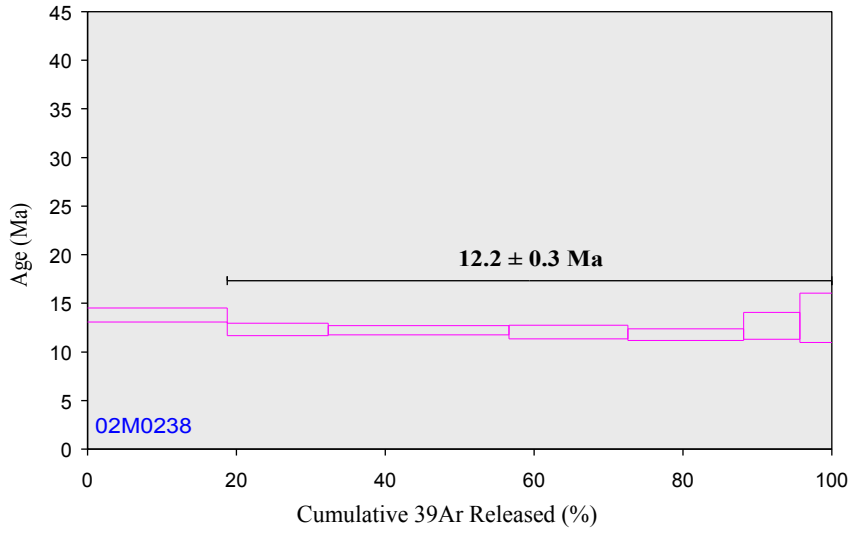
Cocos Ridge
SO144/3-78DR-1 (whole rock)

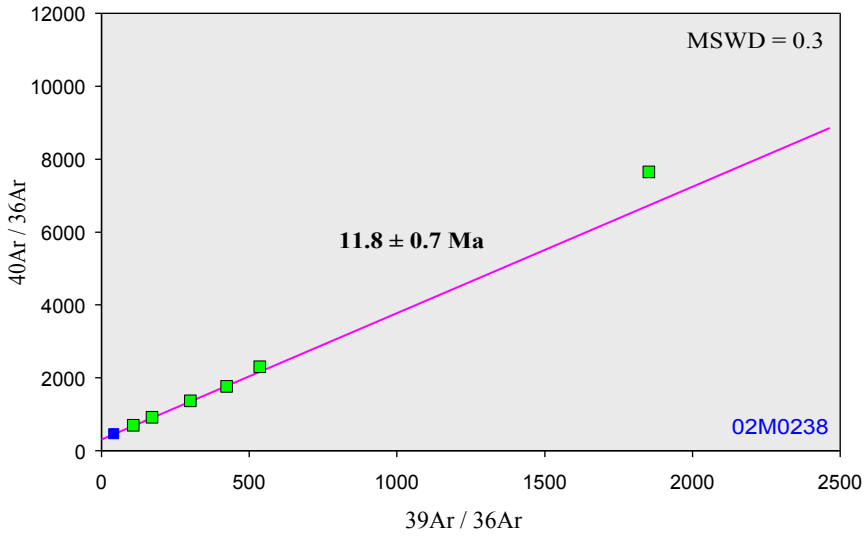


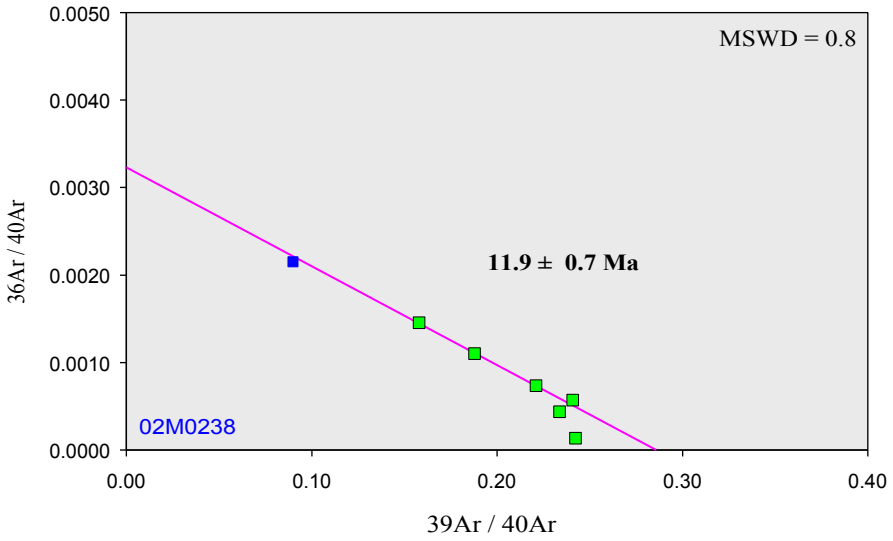




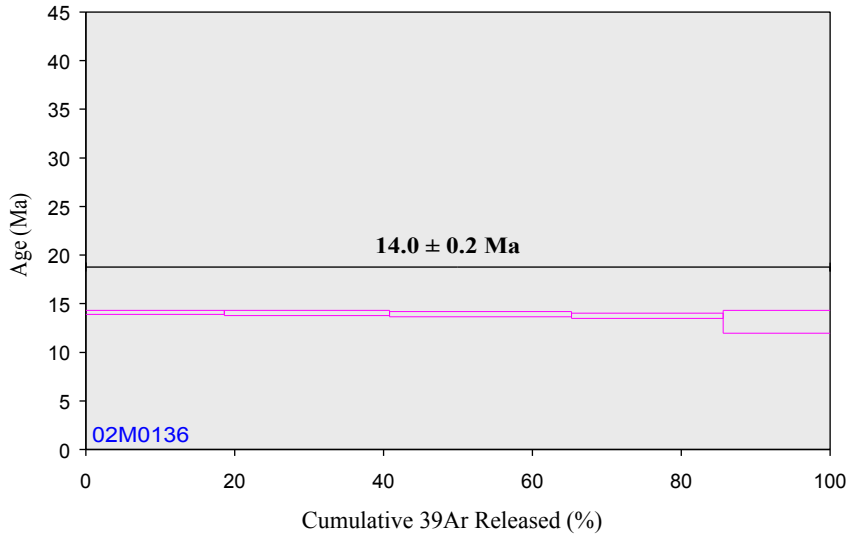
Cocos Ridge
SO144/3-80DR-8 (whole rock)

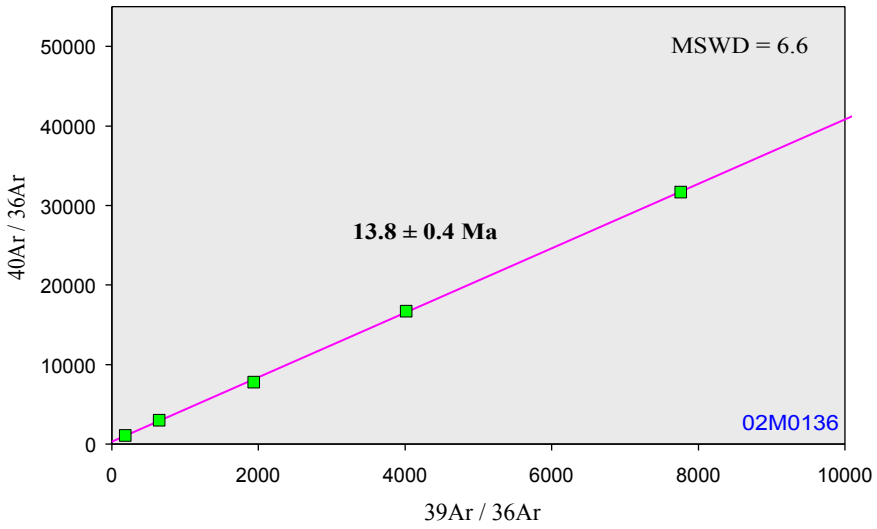


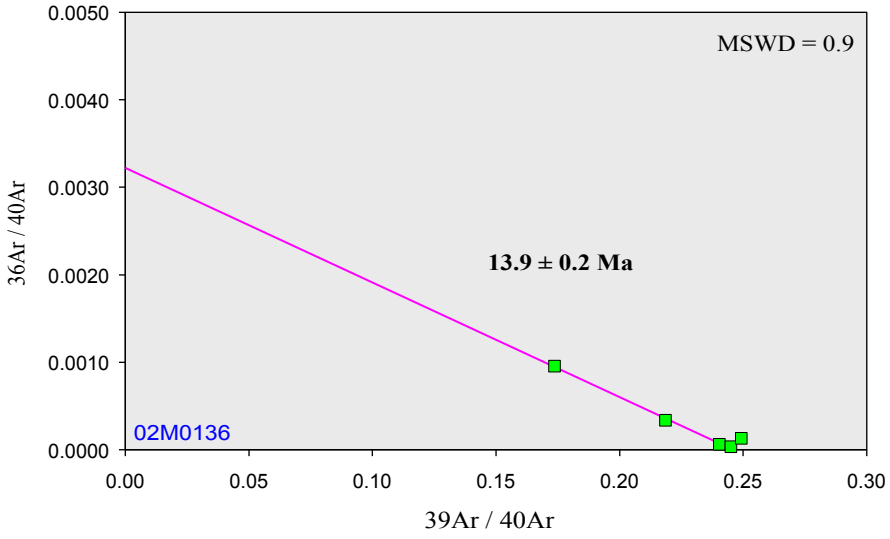




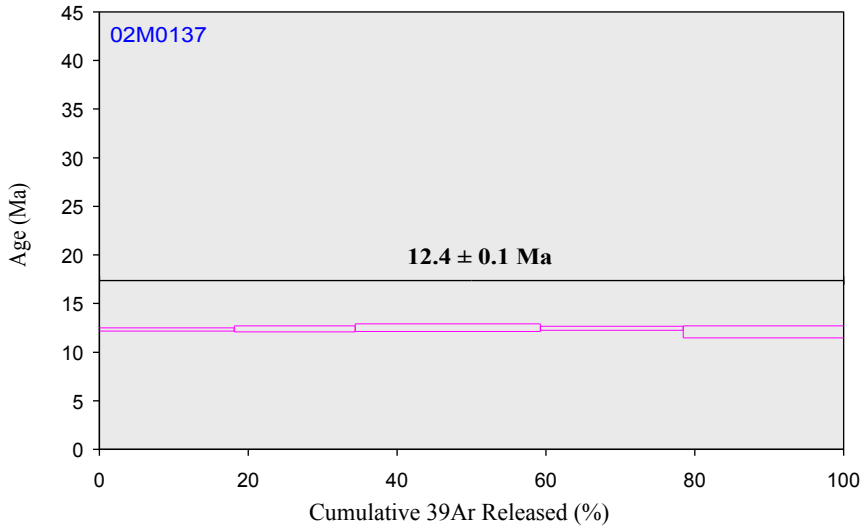
Cocos Ridge
SO144/3-81DR-1 (whole rock)

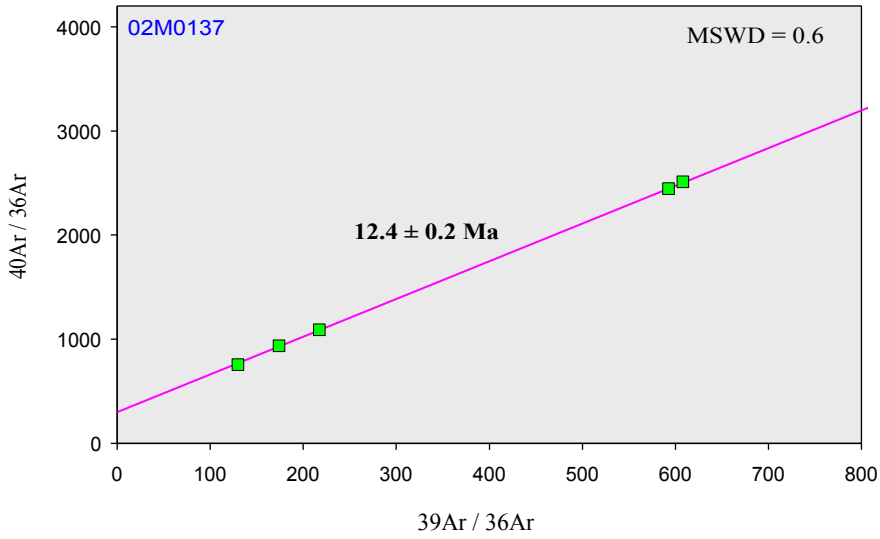


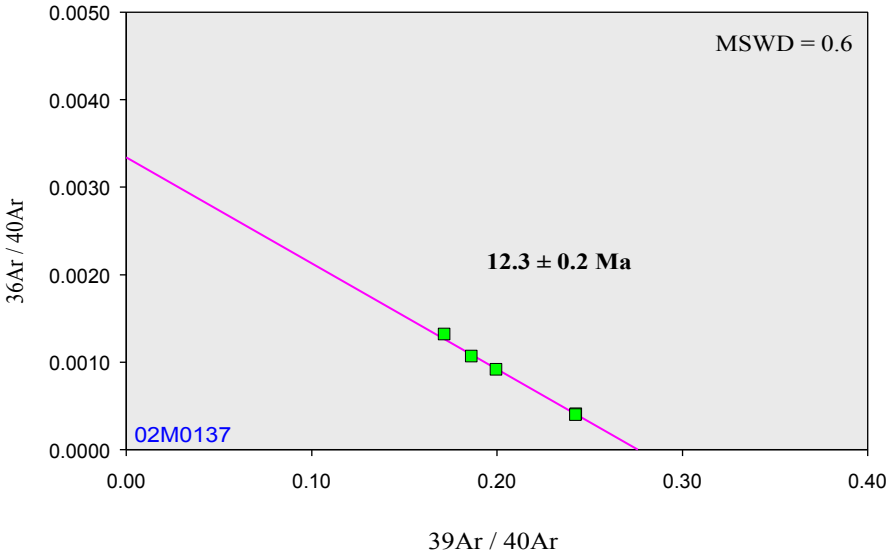




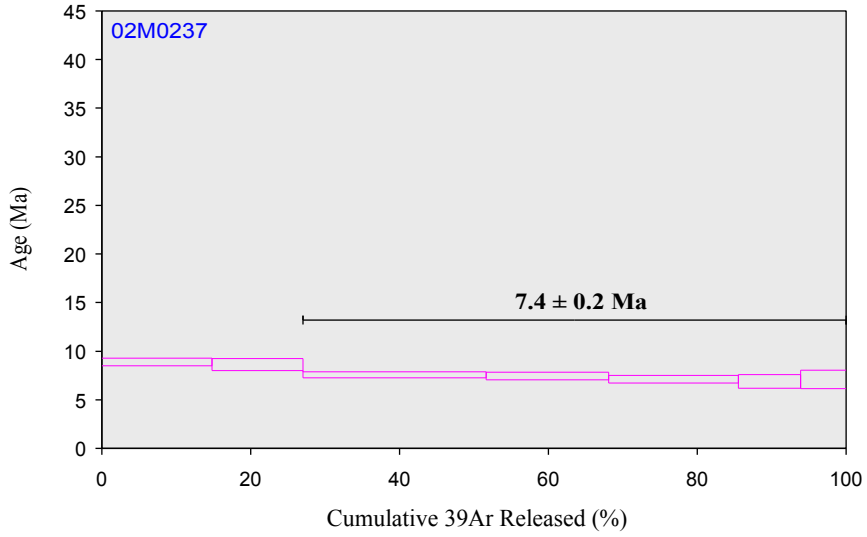
Cocos Ridge
SO144/3-82DR-1 (whole rock)

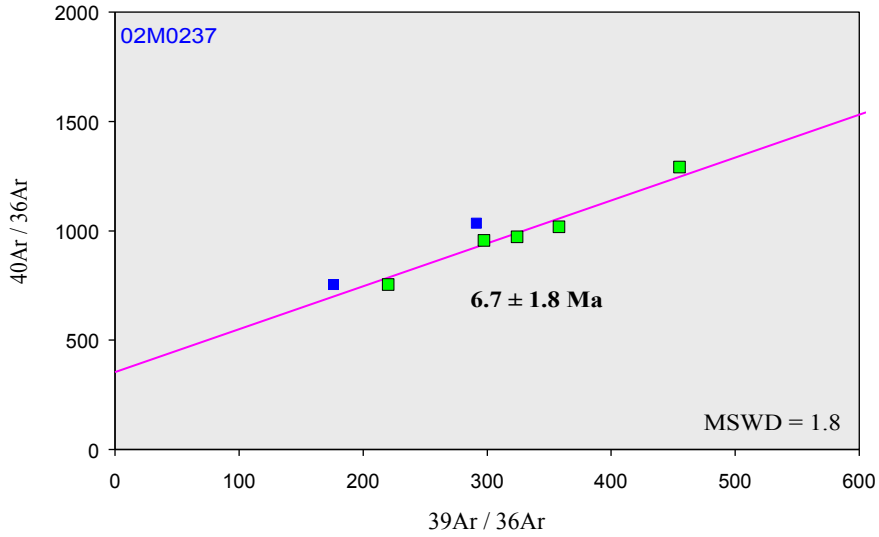


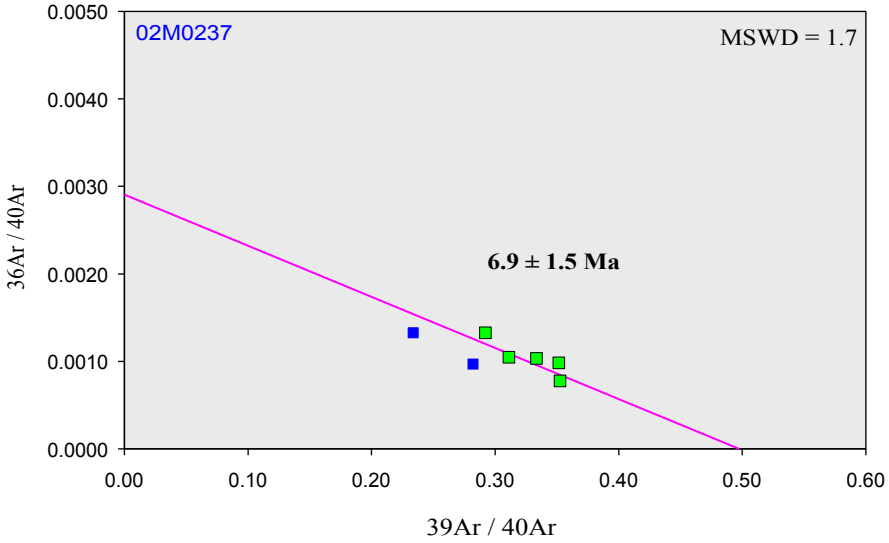




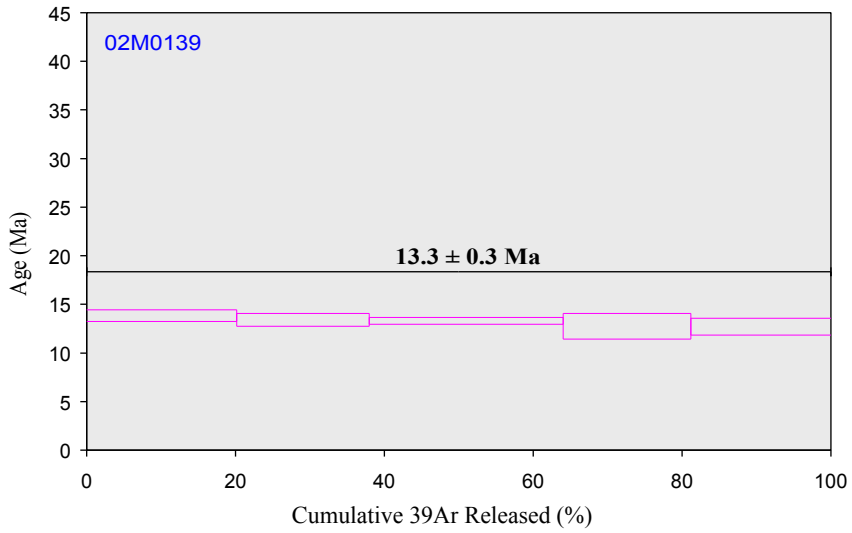
Cocos Ridge
SO144/3-83DR-1 (whole rock)

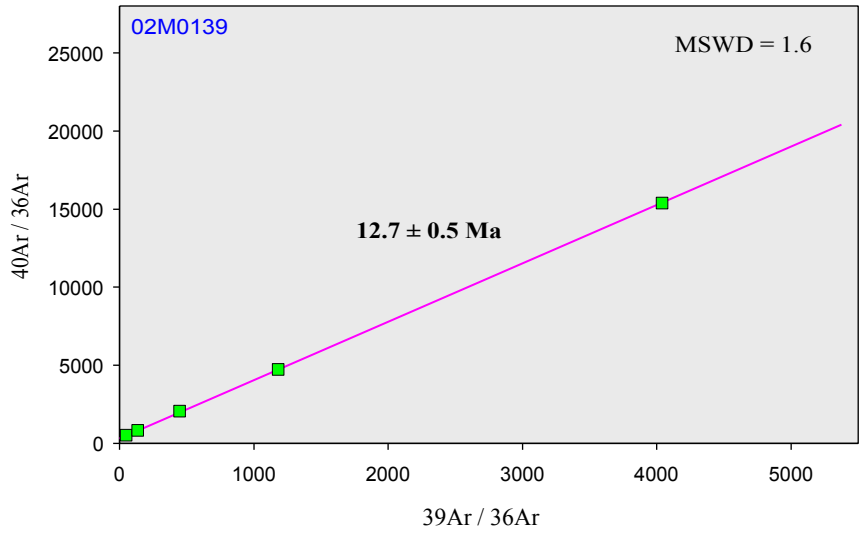


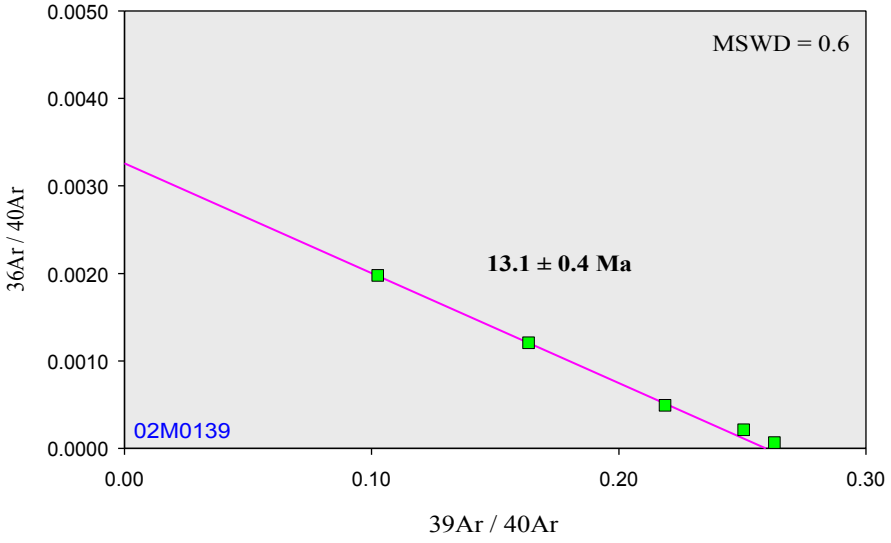




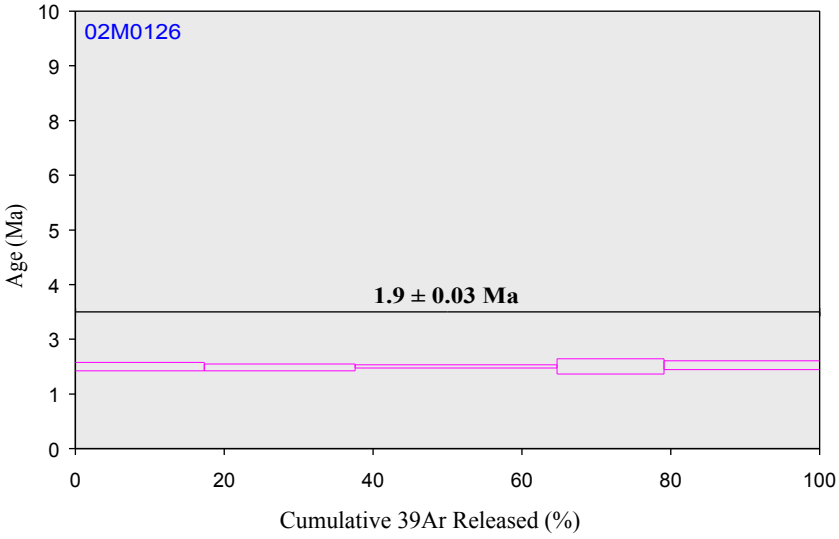
Cocos Ridge
SO144/3-84DR-2 (whole rock)

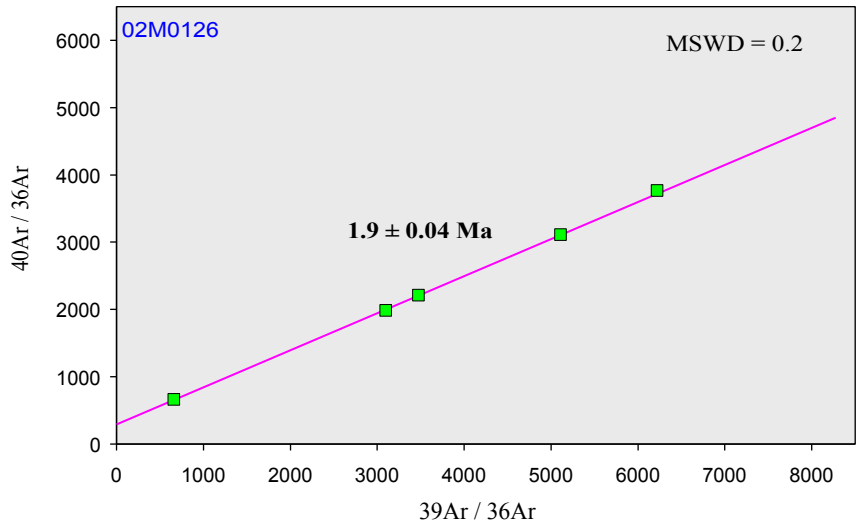


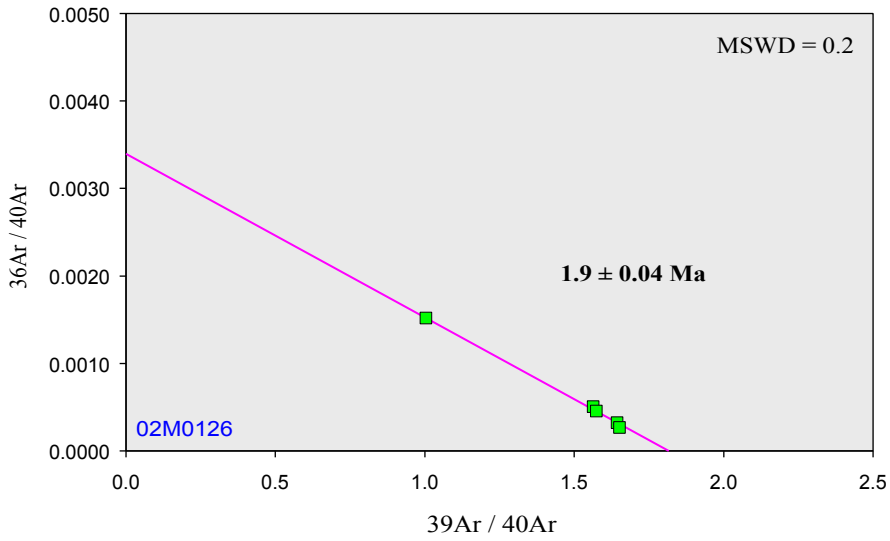




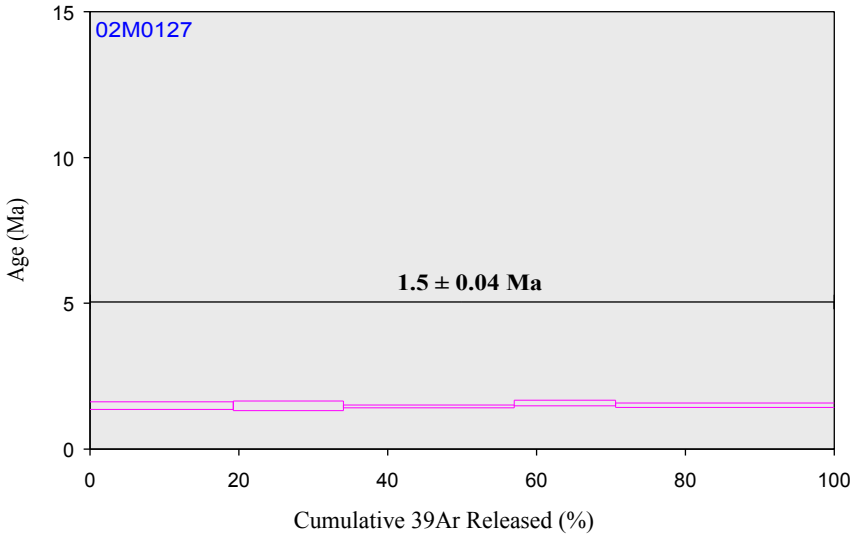
Cocos Island
SO144/3-Cocos-11 (whole rock)

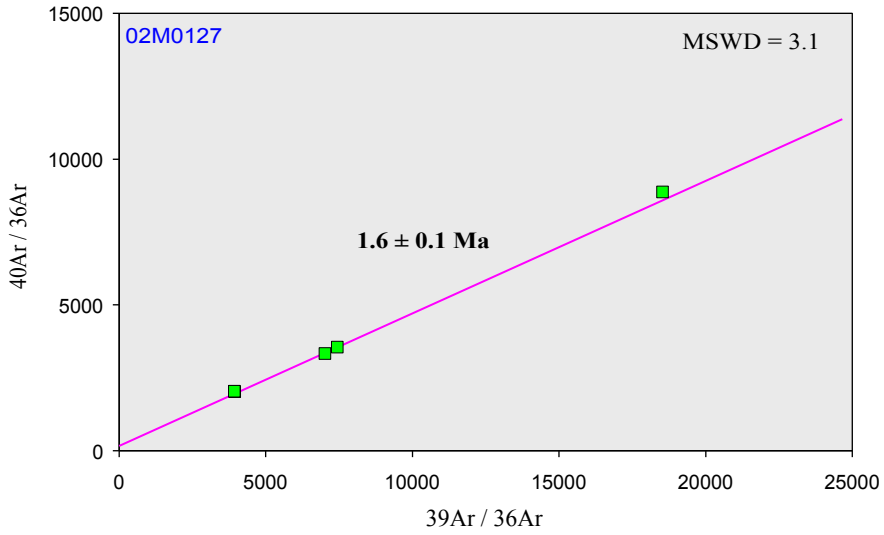


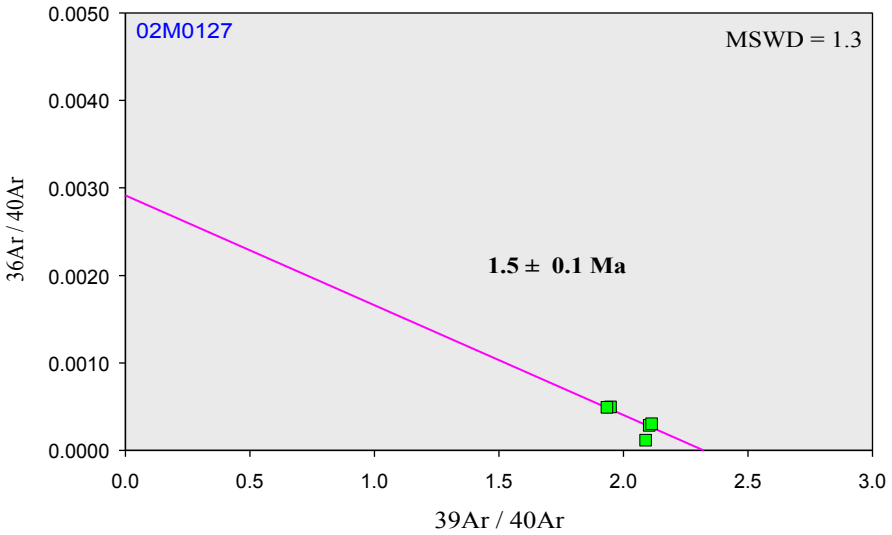




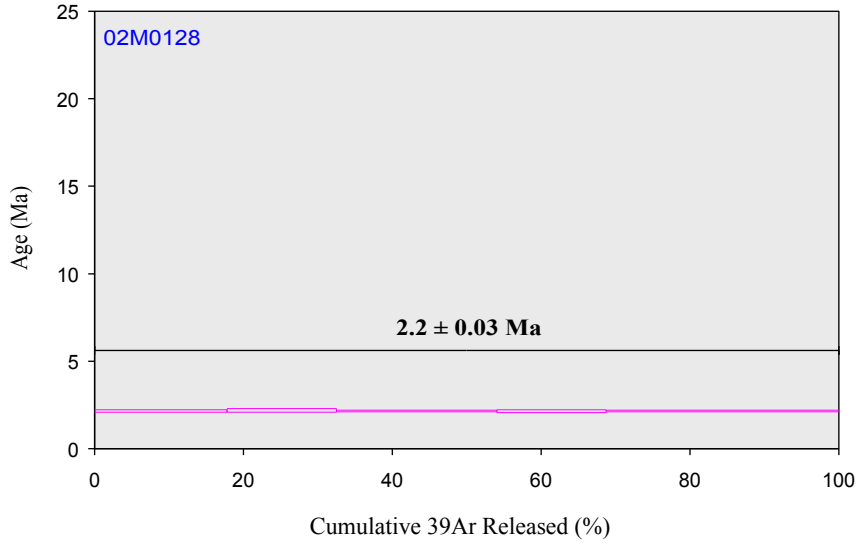
Cocos Island
SO144/3-Cocos-13 (whole rock)

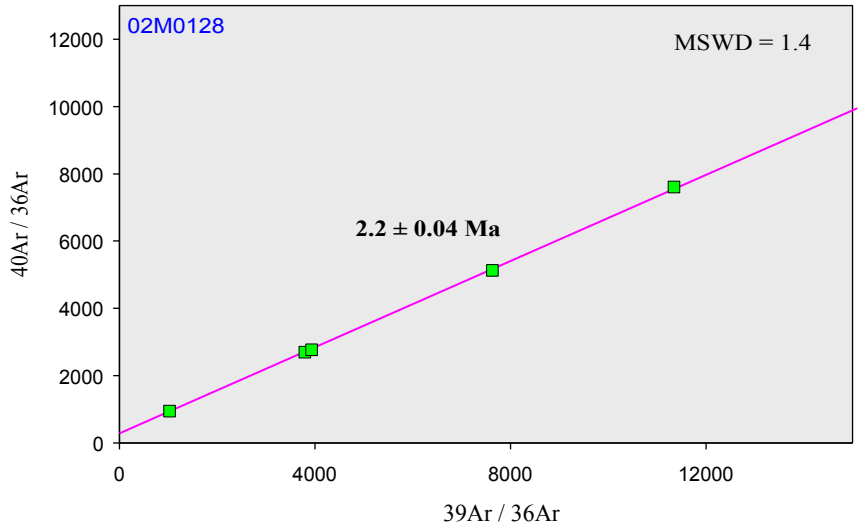


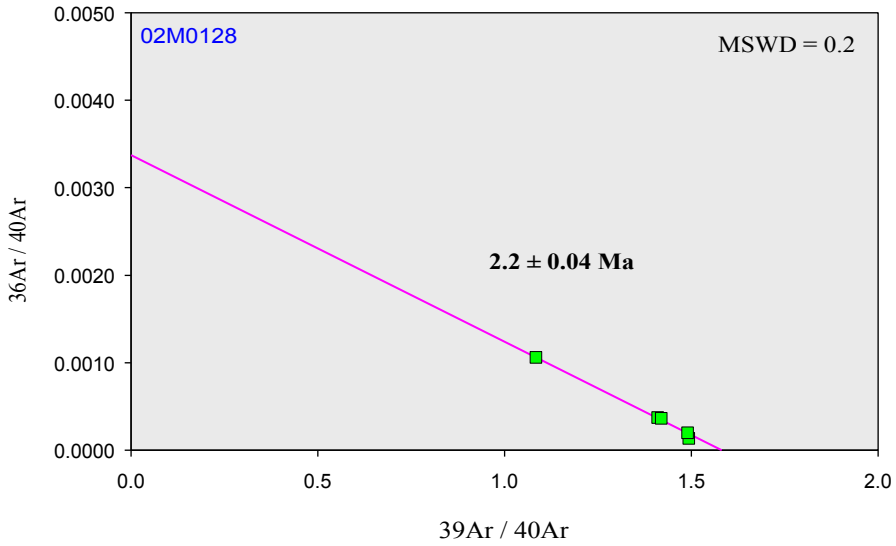




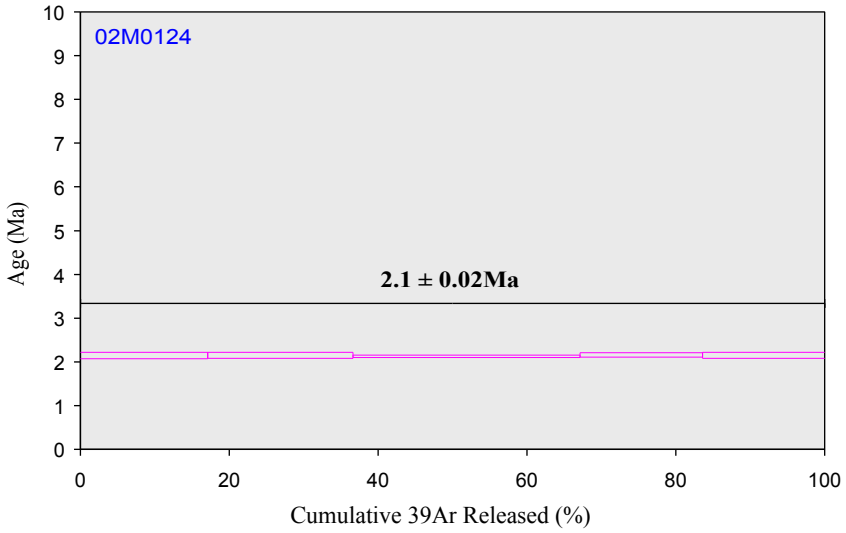
Cocos Island
SO144/3-Cocos-15 (whole rock)

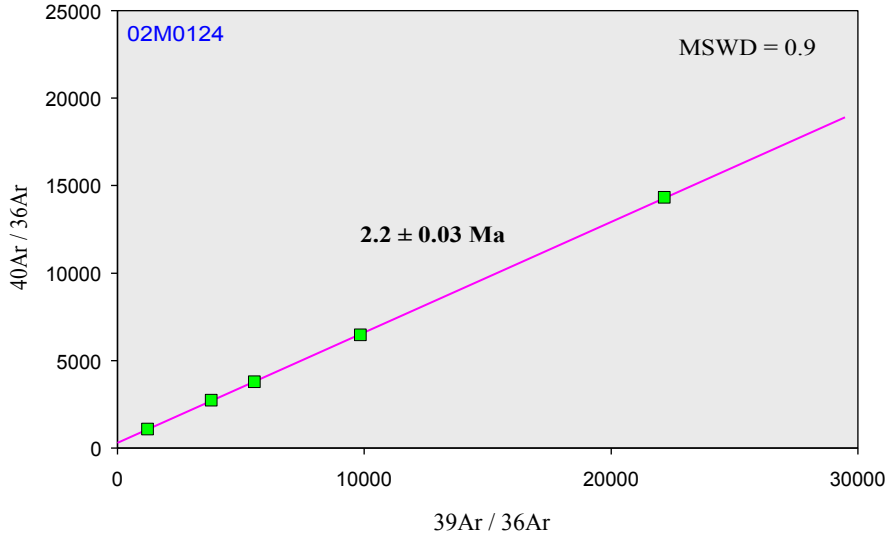


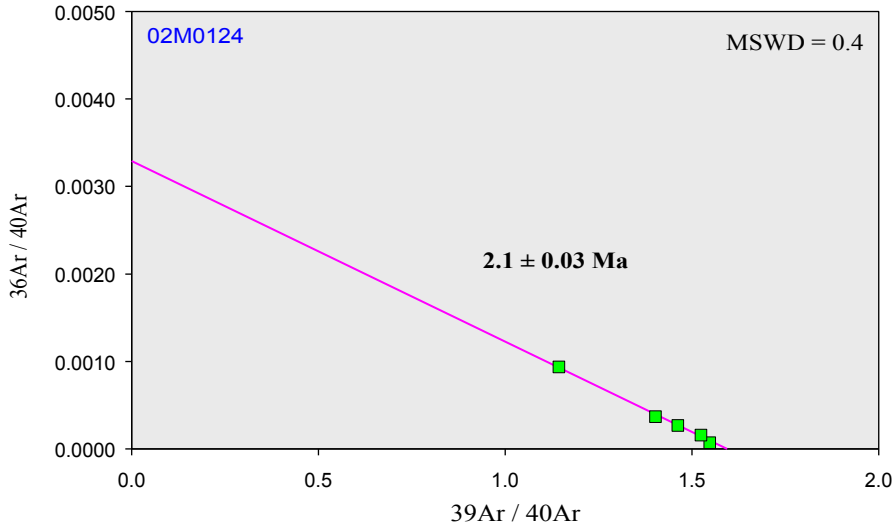




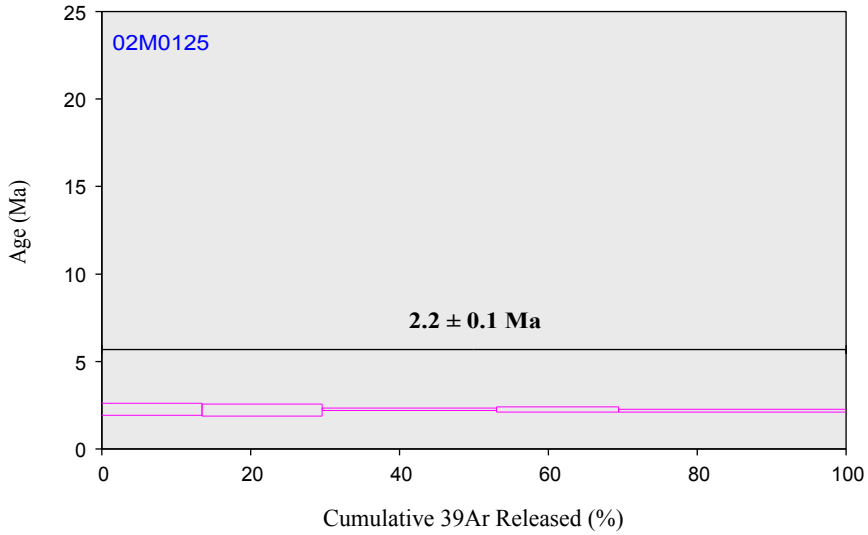
Cocos Island
SO144/3-Cocos-24 (whole rock)

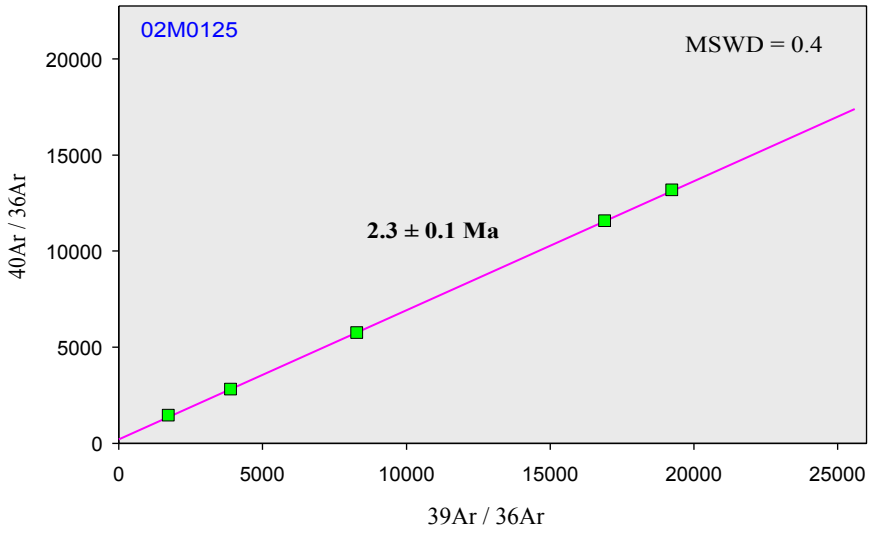


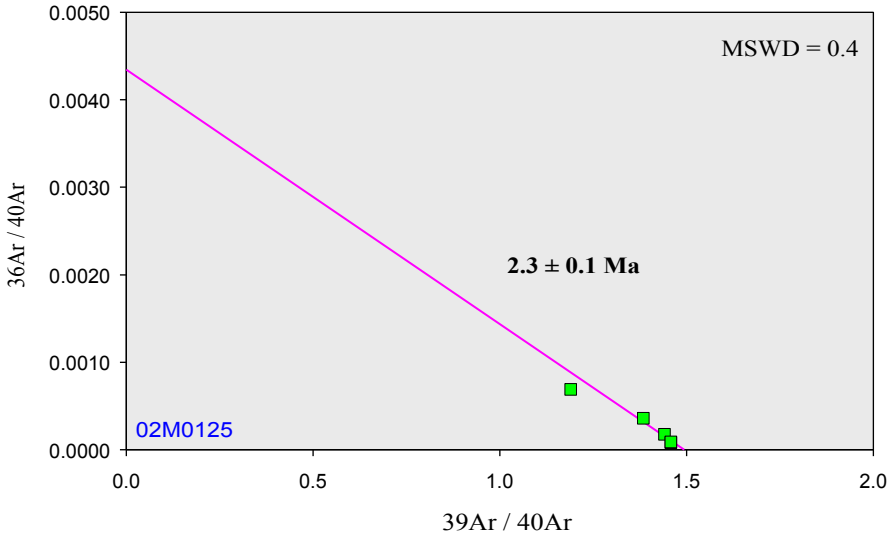




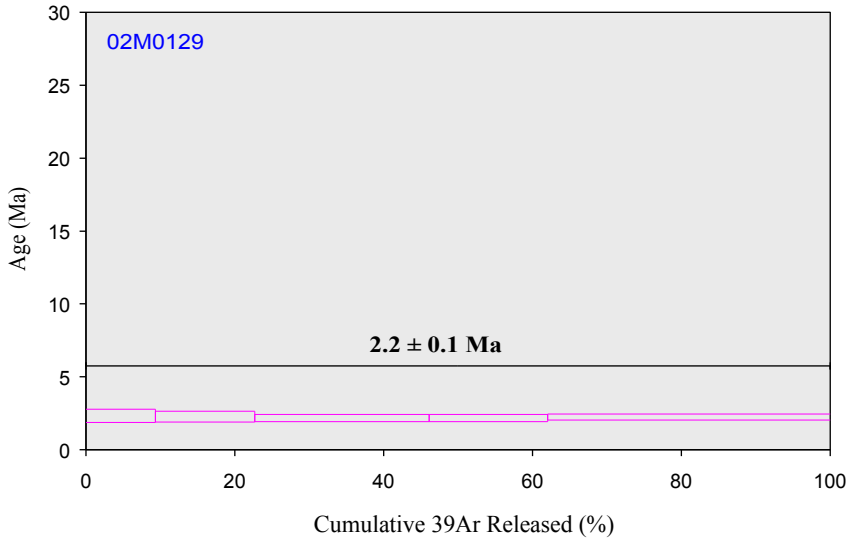
Cocos Island
SO144/3-Cocos-26 (whole rock)

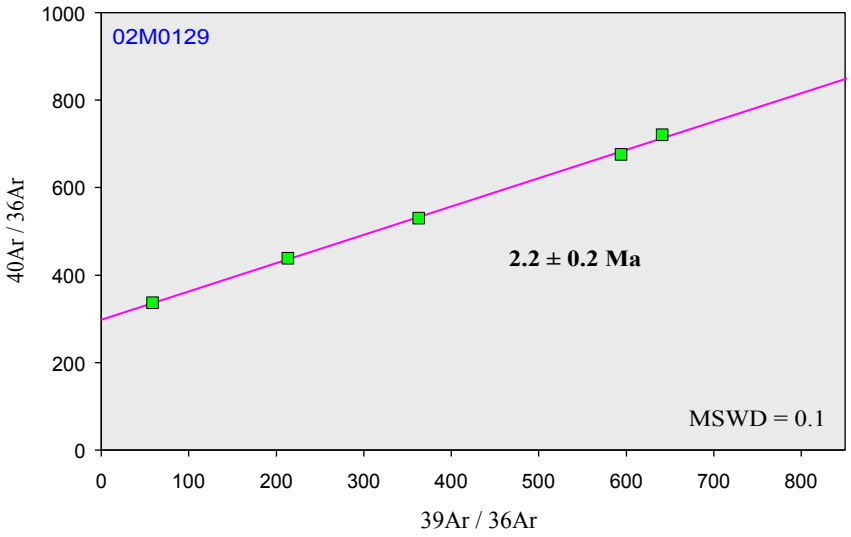


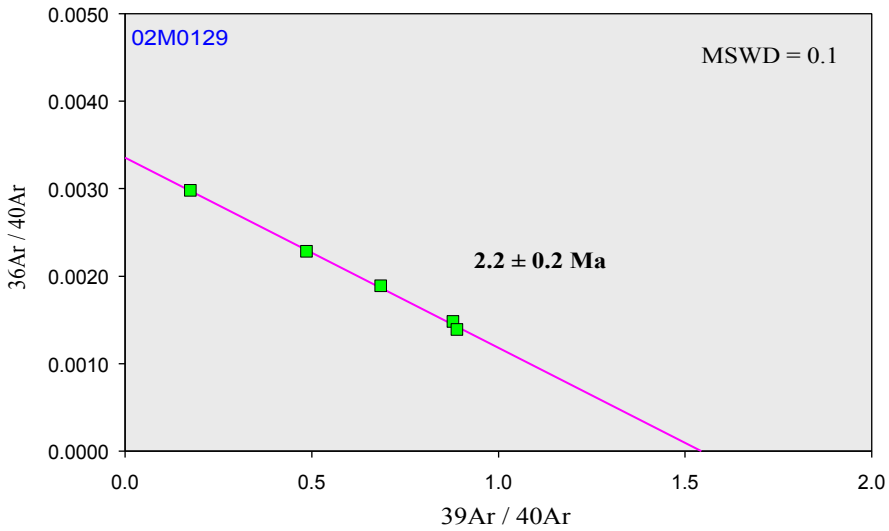




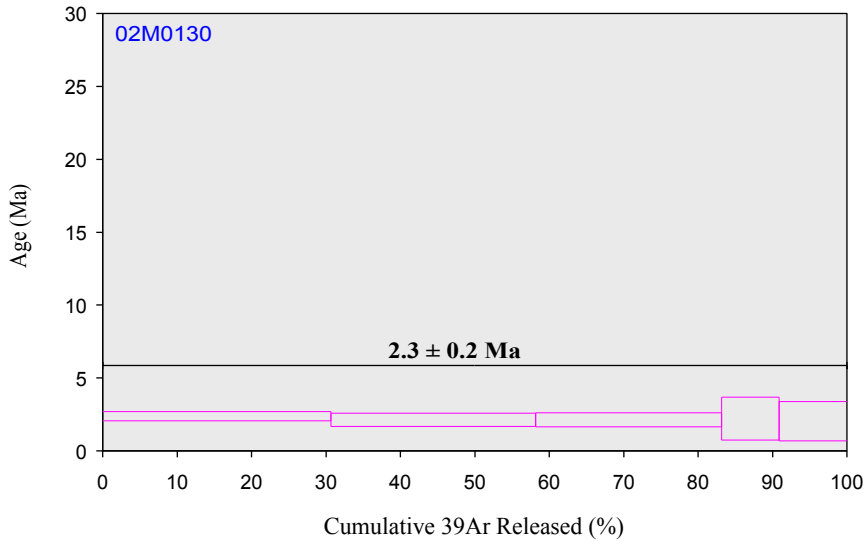
Cocos Island
SO144/3-Cocos-33 (whole rock)

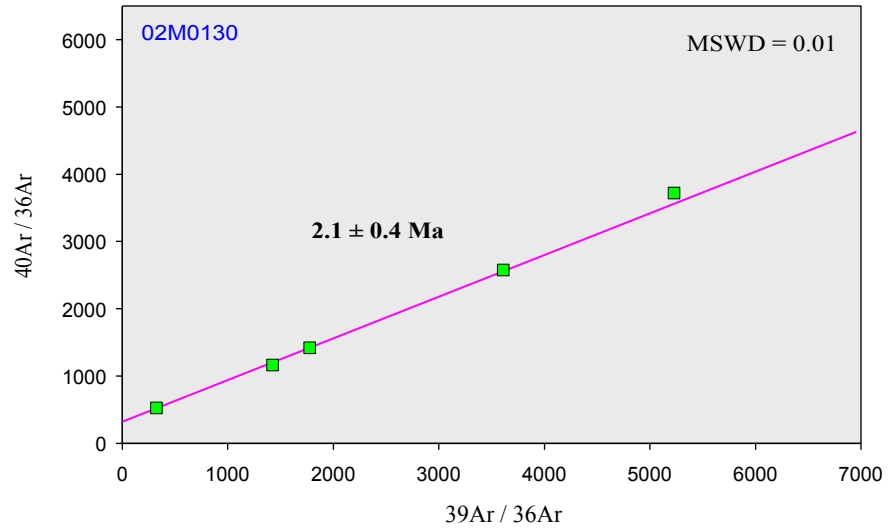


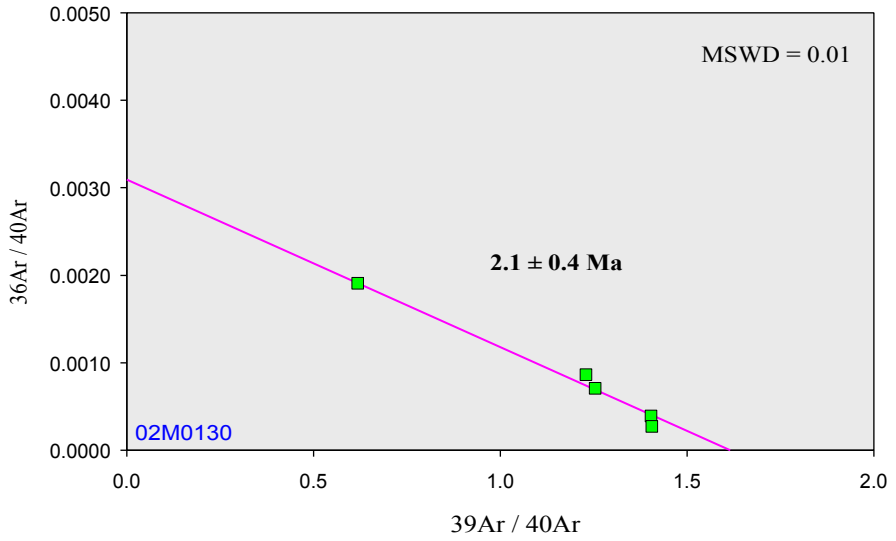




Cocos Island
SO144/3-Cocos-35 (whole rock)







Anlage 4

Age calculations from argon isotopic data

Age Calculations From Argon Isotopic Data

Lab ID	Seamount	Age	± 2σ	% 39Ar in plateau age calculation	MSWD	40(a+r)/36(a)	± 2σ	K/Ca
	Malpelo Ridge							
02M0106	*SO144/3-3TVG-4 (whole rock: multiple single fusions*							
	Plateau age	10.7	0.6	100	0.2			0.01
	Normal isochron	10.7	0.9		0.3	295	5	
	Inverse isochron	10.7	0.9		0.3	295	5	
	Total fusion	10.7	0.6					
	Malpelo Ridge							
02M0059	*SO144/3-5DR-1 (whole rock: multiple single/incremen*							
	Plateau age	15.4	0.2	100	2.1			0.06
	Normal isochron	15.7	0.2		0.9	288	6	
	Inverse isochron	15.7	0.3		1.1	288	6	
	Total fusion	15.4	0.2					
	Malpelo Ridge							
02M0232	*SO144/3-5DR-1 (whole rock: incremental heating)*							
	Plateau age	15.7	0.3	100	0.6			0.06
	Normal isochron	15.4	0.8		0.7	309	33	
	Inverse isochron	15.5	0.8		0.7	307	33	
	Total fusion	15.7	0.4					
	Malpelo Ridge							
02M0060	*SO144/3-6DR-1 (whole rock: multiple single/incremen*							
	Plateau age	12.4	0.3	100	2.7			0.1
	Normal isochron	11.9	0.3		0.3	299	2	
	Inverse isochron	11.9	0.3		0.3	299	2	
	Total fusion	12.6	0.2					
	Malpelo Ridge							
02M0212	*SO144/3-6DR-1 (whole rock: incremental heating)*							
	Plateau age	12.4	0.3	95	0.1			0.1
	Normal isochron	12.4	0.5		0.2	295	3	
	Inverse isochron	12.4	0.4		0.2	295	3	
	Total fusion	12.8	0.4					
	Malpelo Ridge							
02M1124	*SO144/3-7DR-1 (whole rock: multiple single fusions)*							

	Plateau age	14.2	0.6	100	0.4			0.01
	Normal isochron	14.2	0.6		0.4	296	6	
	Inverse isochron	14.2	0.6		0.4	296	6	
	Total fusion	14.2	0.6					
	Carnegie Ridge							
02M0111	*SO144/3-11aDR-21 (whole rock: multiple single fusio*							
	Plateau age	11.0	0.4	100	0.7			0.01
	Normal isochron	11.0	0.4		0.9	296	5	
	Inverse isochron	11.0	0.4		0.9	296	5	
	Total fusion	11.1	0.4					
	Carnegie Ridge							
02M0112	*SO144/3-13DR-1 (whole rock: multiple single fusions*							
	Plateau age	10.4	0.4	100	0.6			0.01
	Normal isochron	10.2	0.5		0.4	299	5	
	Inverse isochron	10.2	0.5		0.4	299	5	
	Total fusion	10.4	0.4					
	Carnegie Ridge							
02M0085	*SO144/3-17TVG-1 (whole rock: multiple single/increm*							
	Plateau age	16.3	0.1	100	2.0			0.4
	Normal isochron	16.2	0.1		1.4	300	5	
	Inverse isochron	16.2	0.1		1.4	300	5	
	Total fusion	16.3	0.1					
	Carnegie Ridge							
02M0213	*SO144/3-17TVG-1 (whole rock: incremental heating)*							
	Plateau age	16.4	0.1	70	0.2			0.37
	Normal isochron	16.3	0.3		0.1	302	20	
	Inverse isochron	16.3	0.3		0.1	301	20	
	Total fusion	16.7	0.1					
	Carnegie Ridge							
02M0113	*SO144/3-18DR-1 (whole rock: multiple single fusions*							
	Plateau age	11.0	0.9	100	0.8			0.01
	Normal isochron	8.7	3.2		0.4	299	5	
	Inverse isochron	8.7	3.1		0.4	300	5	
	Total fusion	11.2	0.9					

	Carnegie Ridge						
02M0115	*SO144/3-19DR-5 (whole rock: multiple single fusions*						
	Plateau age	10.8	0.6	100	0.2		0.01
	Normal isochron	10.9	1.6		0.2	295 7	
	Inverse isochron	10.9	1.6		0.2	295 7	
	Total fusion	10.8	0.6				
	Carnegie Ridge						
02M0107	*SO144/3-26TVG-1 (whole rock: multiple single fusion*						
	Plateau age	7.5	0.5	100	0.5		0.01
	Normal isochron	7.6	0.6		0.5	294 5	
	Inverse isochron	7.6	0.6		0.5	294 5	
	Total fusion	7.4	0.5				
	Carnegie Ridge						
02M0083	*SO144/3-28DR-1 (whole rock: multiple single/increme*						
	Plateau age	2.1	0.02	100	1.2		2.6
	Normal isochron	2.1	0.02		1.4	295 6	
	Inverse isochron	2.1	0.03		1.5	295 6	
	Total fusion	2.1	0.02				
	Carnegie Ridge						
02M0214	*SO144/3-28DR-1 (whole rock: incremental heating)*						
	Plateau age	2.1	0.04	100	0.8		2.2
	Normal isochron	2.2	0.1		0.8	292 34	
	Inverse isochron	2.2	0.1		1.0	292 33	
	Total fusion	2.2	0.04				
	Fisher Ridge						
02M0117	*SO144/3-85DR-1 (whole rock: multiple single fusions*						
	Plateau age	16.1	0.7	100	0.6		0.01
	Normal isochron	16.3	0.7		0.4	293 4	
	Inverse isochron	16.3	0.7		0.4	293 4	
	Total fusion	16.0	0.7				
	Coiba Ridge						
02M0061	*SO144/3-89aDR-1 (whole rock: multiple single/increm*						
	Plateau age	16.7	0.1	100	1.6		0.14
	Normal isochron	16.8	0.2		2.0	291 11	
	Inverse isochron	16.8	0.2		1.9	294 10	

	Total fusion	16.7	0.1					
	Coiba Ridge							
02M0215	*SO144/3-89aDR-1 (whole rock: incremental heating)*							
	Plateau age	16.7	0.2	95	0.3			0.14
	Normal isochron	16.5	0.6		0.2	308	58	
	Inverse isochron	16.5	0.6		0.3	309	57	
	Total fusion	16.8	0.2					
	Coiba Ridge							
02M0062	*SO144/3-90DR-1 (whole rock: multiple single/increme*							
	Plateau age	11.2	0.2	100	0.4			0.03
	Normal isochron	11.1	0.3		0.5	297	4	
	Inverse isochron	11.1	0.3		0.5	297	4	
	Total fusion	11.2	0.3					
	Coiba Ridge							
02M0216	*SO144/3-90DR-1 (whole rock: incremental heating)*							
	Plateau age	11.2	0.5	87	0.2			0.03
	Normal isochron	11.2	1.9		0.3	295	27	
	Inverse isochron	11.2	1.9		0.3	295	27	
	Total fusion	11.7	0.5					
	Cocos Ridge							
02M0017	*SO144/3-32DR-1 (whole rock: multiple single/increme*							
	Plateau age	1.6	0.3	100	0.7			0.01
	Normal isochron	1.4	0.3		0.3	300	4	
	Inverse isochron	1.5	0.3		0.4	299	4	
	Total fusion	1.8	0.4					
	Cocos Ridge							
02M0016	*SO144/3-33DR-1 (whole rock: multiple single/increme*							
	Plateau age	5.5	0.3	100	0.7			0.02
	Normal isochron	5.4	0.3		0.8	296	5	
	Inverse isochron	5.5	0.3		0.8	296	5	
	Total fusion	5.5	0.3					
	Cocos Ridge							
02M0015	*SO144/3-38DR-12 (whole rock: multiple single/increm*							
	Plateau age	0.6	0.1	100	0.4			0.21

	Normal isochron	0.7	0.2		0.3	294	4	
	Inverse isochron	0.7	0.1		0.3	294	4	
	Total fusion	0.6	0.1					
	Cocos Ridge							
02M0217	*SO144/3-38DR-12 (whole rock: incremental heating)*							
	Plateau age	0.6	0.1	100	0.9			0.24
	Normal isochron	1.9	1.4		0.5	282	16	
	Inverse isochron	1.9	1.2		0.5	282	16	
	Total fusion	0.6	0.1					
	Cocos Ridge							
02M0014	*SO144/3-40aDR-1 (whole rock: multiple single/increm*							
	Plateau age	0.6	0.1	100	0.4			0.13
	Normal isochron	0.6	0.1		0.4	295	3	
	Inverse isochron	0.6	0.1		0.4	295	3	
	Total fusion	0.6	0.1					
	Cocos Ridge							
02M0013	*SO144/3-41DR-1 (whole rock: multiple single/increme*							
	Plateau age	9.0	0.2	100	1.5			0.02
	Normal isochron	8.6	0.4		3.6	294	10	
	Inverse isochron	9.1	0.2		1.4	291	6	
	Total fusion	8.8	0.2					
	Cocos Ridge							
02M0219	*SO144/3-41DR-1 (whole rock: incremental heating)*							
	Plateau age	9.2	0.3	100	0.8			0.04
	Normal isochron	8.8	0.5		0.3	306	12	
	Inverse isochron	8.9	0.5		0.3	306	12	
	Total fusion	9.1	0.3					
	Cocos Ridge							
02M0012	*SO144/3-42DR-1 (whole rock: multiple single/increme*							
	Plateau age	1.2	0.1	100	0.8			0.4
	Normal isochron	1.2	0.1		0.4	292	6	
	Inverse isochron	1.2	0.1		0.6	292	6	
	Total fusion	1.2	0.1					
	Cocos Ridge							

02M0220	*SO144/3-42DR-1 (whole rock: incremental heating)*							
	Plateau age	1.3	0.1	100	1.2			0.44
	Normal isochron	1.4	0.3		1.2	290	14	
	Inverse isochron	1.4	0.3		1.3	290	14	
	Total fusion	1.3	0.1					
	Cocos Ridge							
02M0021	*SO144/3-45aDR-1 (whole rock: multiple single/increm*							
	Plateau age	10.3	0.3	100	0.6			0.03
	Normal isochron	10.1	0.4		1.3	295	5	
	Inverse isochron	10.3	0.3		0.6	294	4	
	Total fusion	10.0	0.4					
	Cocos Ridge							
02M0221	*SO144/3-45aDR-1 (whole rock: incremental heating)*							
	Plateau age	10.8	0.5	87	1.0			0.05
	Normal isochron	10.7	0.8		1.1	297	18	
	Inverse isochron	10.7	0.8		1.2	299	20	
	Total fusion	10.4	0.5					
	Cocos Ridge							
02M0011	*SO144/3-46TVG-1 (whole rock: multiple single/increm*							
	Plateau age	1.9	0.1	100	1.3			0.15
	Normal isochron	1.9	0.1		1.2	291	7	
	Inverse isochron	1.9	0.1		1.2	291	7	
	Total fusion	1.9	0.1					
	Cocos Ridge							
02M0222	*SO144/3-46TVG-1 (whole rock: incremental heating)*							
	Plateau age	2.1	0.1	100	2.0			0.2
	Normal isochron	2.4	0.6		2.5	252	96	
	Inverse isochron	2.3	0.6		2.3	265	117	
	Total fusion	2.1	0.1					
	Cocos Ridge							
02M0010	*SO144/3-47DR-7 (whole rock: multiple single/increme*							
	Plateau age	3.5	0.1	100	1.2			0.14
	Normal isochron	3.5	0.1		1.0	292	5	
	Inverse isochron	3.5	0.1		1.0	292	5	
	Total fusion	3.4	0.1					

	Cocos Ridge							
02M0223	*SO144/3-47DR-7 (whole rock: incremental heating)*							
	Plateau age	3.6	0.1	100	0.8			0.17
	Normal isochron	3.9	0.7		0.9	286	29	
	Inverse isochron	3.8	0.7		0.8	287	29	
	Total fusion	3.6	0.2					
	Cocos Ridge							
02M0022	*SO144/3-48DR-2 (whole rock: multiple single/increme*							
	Plateau age	11.6	0.2	100	0.5			0.03
	Normal isochron	11.7	0.3		0.5	291	6	
	Inverse isochron	11.7	0.3		0.4	291	6	
	Total fusion	11.5	0.3					
	Cocos Ridge							
02M0224	*SO144/3-48DR-2 (whole rock: incremental heating)*							
	Plateau age	12.1	0.4	100	0.2			0.05
	Normal isochron	12.0	1.1		0.1	303	63	
	Inverse isochron	12.0	1.1		0.2	302	63	
	Total fusion	12.1	0.4					
	Cocos Ridge							
02M0019	*SO144/3-49aDR-1 (whole rock: multiple single/increm*							
	Plateau age	8.2	0.3	100	0.2			0.01
	Normal isochron	8.2	0.4		0.2	297	6	
	Inverse isochron	8.2	0.4		0.3	297	6	
	Total fusion	8.3	0.4					
	Cocos Ridge							
02M0023	*SO144/3-51DR-1 (whole rock: multiple single/increme*							
	Plateau age	13.2	0.3	100	0.7			0.04
	Normal isochron	12.8	0.6		0.5	299	4	
	Inverse isochron	12.8	0.6		0.5	299	4	
	Total fusion	13.2	0.3					
	Cocos Ridge							
02M0225	*SO144/3-51DR-1 (whole rock: incremental heating)*							
	Plateau age	13.4	0.4	100	1.0			0.05
	Normal isochron	13.4	0.8		1.1	295	7	

	Inverse isochron	13.5	0.9		1.2	295	7	
	Total fusion	13.6	0.5					
	Cocos Ridge							
02M0009	*SO144/3-53DR-3 (whole rock: multiple single/increme*							
	Plateau age	11.6	0.4	100	0.7			0.01
	Normal isochron	11.4	0.7		0.6	298	7	
	Inverse isochron	11.4	0.7		0.7	298	7	
	Total fusion	11.7	0.5					
	Cocos Ridge							
02M0026	*SO144/3-54aDR-2 (whole rock: multiple single/increm*							
	Plateau age	13.4	0.4	100	0.3			0.01
	Normal isochron	13.5	0.5		0.2	294	5	
	Inverse isochron	13.6	0.5		0.2	294	5	
	Total fusion	13.4	0.4					
	Cocos Ridge							
02M0020	*SO144/3-55DR-1 (whole rock: multiple single/increme*							
	Plateau age	11.2	0.6	100	0.4			0.01
	Normal isochron	10.7	1.1		0.5	298	5	
	Inverse isochron	10.8	1.1		0.4	297	5	
	Total fusion	11.2	0.6					
	Cocos Ridge							
02M0027	*SO144/3-56TVG-1 (whole rock: multiple single/increm*							
	Plateau age	12.1	0.2	100	0.8			0.01
	Normal isochron	11.9	0.3		1.1	298	3	
	Inverse isochron	12.0	0.3		0.7	297	3	
	Total fusion	12.1	0.3					
	Cocos Ridge							
02M0226	*SO144/3-56TVG-1 (whole rock: incremental heating)*							
	Plateau age	12.6	0.5	100	0.4			0.03
	Normal isochron	12.4	0.8		0.5	297	5	
	Inverse isochron	12.5	0.8		0.5	297	5	
	Total fusion	12.5	0.5					
	Cocos Ridge							
02M0028	*SO144/3-60DR-8 (plagioclase: multiple single fusion*							

	Plateau age	12.4	0.1	100	0.4			0.35
	Normal isochron	12.6	0.2		0.5	239	65	
	Inverse isochron	12.5	0.2		0.2	251	74	
	Total fusion	12.4	0.2					
	Cocos Ridge							
02M0263	*SO144/3-60DR-8 (plagioclase: multiple single fusion*							
	Plateau age	12.4	0.2	100	0.2			0.34
	Normal isochron	12.4	0.5		0.3	294	47	
	Inverse isochron	12.5	0.5		0.2	289	48	
	Total fusion	12.4	0.3					
	Cocos Ridge							
02M0029	*SO144/3-62DR-1 (whole rock: multiple single/increme*							
	Plateau age	12.7	0.2	100	1.2			0.09
	Normal isochron	12.8	0.6		72.0	287	49	
	Inverse isochron	12.5	0.3		0.6	305	8	
	Total fusion	12.7	0.2					
	Cocos Ridge							
02M0227	*SO144/3-62DR-1 (whole rock: incremental heating)*							
	Plateau age	12.6	0.1	53	1.3			0.17
	Normal isochron	12.7	0.4		1.2	278	38	
	Inverse isochron	12.7	0.4		1.5	280	42	
	Total fusion	13.2	0.1					
	Cocos Ridge							
02M0228	*SO144/3-63aDR-1 (whole rock: incremental heating)*							
	Plateau age	12.7	0.3	80	0.3			0.04
	Normal isochron	12.7	0.5		0.4	295	7	
	Inverse isochron	12.7	0.5		0.4	295	7	
	Total fusion	13.1	0.4					
	Cocos Ridge							
02M0008	*SO144/3-64DR-1 (whole rock: incremental heating)*							
	Plateau age	4.2	0.1	100	0.7			0.17
	Normal isochron	4.2	0.2		0.5	295	6	
	Inverse isochron	4.3	0.2		0.7	294	6	
	Total fusion	4.2	0.1					

	Cocos Ridge							
02M0007	*SO144/3-65DR-1 (whole rock: multiple single/increme*							
	Plateau age	3.6	0.1	100	2.0			0.11
	Normal isochron	3.6	0.2		2.1	293	10	
	Inverse isochron	3.7	0.2		2.1	293	9	
	Total fusion	3.6	0.1					
	Cocos Ridge							
02M0230	*SO144/3-65DR-1 (whole rock: incremental heating)*							
	Plateau age	3.8	0.2	100	0.8			0.11
	Normal isochron	3.5	1.1		1.0	306	39	
	Inverse isochron	3.6	1.0		0.9	305	39	
	Total fusion	3.8	0.2					
	Cocos Ridge							
02M0031	*SO144/3-65aDR-2 (whole rock: multiple single/increm*							
	Plateau age	4.0	0.2	100	2.2			0.06
	Normal isochron	4.1	0.2		1.6	290	6	
	Inverse isochron	4.1	0.2		1.7	290	6	
	Total fusion	3.8	0.2					
	Cocos Ridge							
02M0231	*SO144/3-65aDR-2 (whole rock: incremental heating)*							
	Plateau age	3.9	0.2	100	1.0			0.09
	Normal isochron	4.0	1.1		1.4	280	93	
	Inverse isochron	3.9	1.0		1.3	295	104	
	Total fusion	3.8	0.2					
	Cocos Ridge							
02M0006	*SO144/3-67DR-1 (whole rock: multiple single/increme*							
	Plateau age	1.2	0.1	100	0.9			0.09
	Normal isochron	1.1	0.2		0.9	298	4	
	Inverse isochron	1.1	0.2		0.9	298	4	
	Total fusion	1.3	0.1					
	Cocos Ridge							
02M0233	*SO144/3-67DR-1 (whole rock: incremental heating)*							
	Plateau age	1.2	0.2	100	0.3			0.14
	Normal isochron	1.5	1.2		0.4	288	30	
	Inverse isochron	1.5	1.0		0.4	288	30	

	Total fusion	1.2	0.2					
	Cocos Ridge							
02M0005	*SO144/3-69DR-1 (whole rock: multiple single/increme*							
	Plateau age	5.1	0.2	100	0.6			0.09
	Normal isochron	5.2	1.0		0.6	295	6	
	Inverse isochron	5.2	1.0		0.6	296	6	
	Total fusion	5.2	0.2					
	Cocos Ridge							
02M0234	*SO144/3-69DR-1 (whole rock: incremental heating)*							
	Plateau age	5.0	0.3	100	0.5			0.11
	Normal isochron	3.6	2.6		0.3	306	18	
	Inverse isochron	3.6	2.4		0.3	306	18	
	Total fusion	5.0	0.3					
	Cocos Ridge							
02M0004	*SO144/3-70bDR-1 (whole rock: multiple single/increm*							
	Plateau age	5.7	0.1	100	0.8			1.13
	Normal isochron	5.6	0.2		0.7	308	17	
	Inverse isochron	5.6	0.2		0.6	308	17	
	Total fusion	5.7	0.1					
	Cocos Ridge							
02M0235	*SO144/3-70bDR-1 (whole rock: incremental heating)*							
	Plateau age	5.8	0.1	100	0.9			1.45
	Normal isochron	5.5	0.5		0.6	352	88	
	Inverse isochron	5.5	0.5		0.6	354	91	
	Total fusion	5.8	0.1					
	Cocos Ridge							
02M0003	*SO144/3-71DR-1 (whole rock: multiple single/increme*							
	Plateau age	4.0	0.1	100	1.4			0.05
	Normal isochron	4.0	0.1		1.5	293	6	
	Inverse isochron	4.0	0.1		1.4	293	6	
	Total fusion	3.9	0.1					
	Cocos Ridge							
02M0236	*SO144/3-71DR-1 (whole rock: incremental heating)*							
	Plateau age	4.1	0.2	100	0.5			0.09

	Normal isochron	3.6	0.7		0.1	357	97	
	Inverse isochron	3.7	0.7		0.1	353	94	
	Total fusion	4.0	0.2					
	Cocos Ridge							
02M0140	*SO144/3-71aDR-1 (whole rock: incremental heating)*							
	Plateau age	3.7	0.1	100	0.8			0.11
	Normal isochron	3.7	0.1		0.8	288	23	
	Inverse isochron	3.7	0.1		0.7	284	23	
	Total fusion	3.7	0.1					
	Cocos Ridge							
02M0141	*SO144/3-72aDR-1 (whole rock: incremental heating)*							
	Plateau age	1.3	0.1	100	0.6			0.13
	Normal isochron	1.4	0.5		0.8	245	186	
	Inverse isochron	1.3	0.5		0.7	266	258	
	Total fusion	1.2	0.1					
	Cocos Ridge							
02M0142	*SO144/3-73DR-1 (whole rock: incremental heating/sin*							
	Plateau age	11.1	0.3	100	0.5			0.02
	Normal isochron	10.3	1.5		0.2	340	85	
	Inverse isochron	10.4	1.5		0.3	339	83	
	Total fusion	11.2	0.3					
	Cocos Ridge							
02M0143	*SO144/3-74DR-1 (whole rock: incremental heating)*							
	Plateau age	10.9	0.3	100	0.2			0.03
	Normal isochron	10.9	0.5		0.2	293	20	
	Inverse isochron	10.9	0.5		0.2	293	19	
	Total fusion	10.8	0.3					
	Cocos Ridge							
02M0131	*SO144/3-77DR-1 (whole rock: incremental heating)*							
	Plateau age	7.9	0.1	77	0.3			0.15
	Normal isochron	8.0	0.5		0.3	283	44	
	Inverse isochron	8.0	0.5		0.3	283	44	
	Total fusion	7.6	0.1					
	Cocos Ridge							

02M0132	*SO144/3-77aDR-1 (whole rock: incremental heating)*							
	Plateau age	10.9	0.2	88	0.1			0.07
	Normal isochron	9.8	6.8		0.1	349	319	
	Inverse isochron	9.8	6.6		0.1	349	327	
	Total fusion	10.8	0.2					
	Cocos Ridge							
02M0133	*SO144/3-78DR-1 (whole rock: incremental heating)*							
	Plateau age	13.0	0.3	100	1.1			0.07
	Normal isochron	11.8	2.1		1.0	308	20	
	Inverse isochron	11.8	2.0		1.0	308	20	
	Total fusion	12.9	0.3					
	Cocos Ridge							
02M0134	*SO144/3-79DR-1 (whole rock: incremental heating)*							
	Plateau age	13.0	0.2	100	0.1			0.04
	Normal isochron	12.9	0.4		0.1	297	11	
	Inverse isochron	12.9	0.4		0.1	297	11	
	Total fusion	12.9	0.3					
	Cocos Ridge							
02M0238	*SO144/3-80DR-8 (whole rock: incremental heating)*							
	Plateau age	12.2	0.3	81	0.7			0.06
	Normal isochron	11.8	0.7		0.3	313	36	
	Inverse isochron	11.9	0.7		0.8	310	35	
	Total fusion	12.5	0.3					
	Cocos Ridge							
02M0136	*SO144/3-81DR-1 (whole rock: incremental heating)*							
	Plateau age	14.0	0.2	100	1.6			0.08
	Normal isochron	13.8	0.4		6.6	311	38	
	Inverse isochron	13.9	0.2		0.9	310	16	
	Total fusion	13.8	0.2					
	Cocos Ridge							
02M0137	*SO144/3-82DR-1 (whole rock: incremental heating)*							
	Plateau age	12.4	0.1	100	0.5			0.21
	Normal isochron	12.4	0.2		0.6	299	19	
	Inverse isochron	12.3	0.2		0.6	300	19	
	Total fusion	12.4	0.2					

	Cocos Ridge							
02M0237	*SO144/3-83DR-1 (whole rock: incremental heating)*							
	Plateau age	7.4	0.2	73	1.50			0.12
	Normal isochron	6.7	1.8		1.8	354	167	
	Inverse isochron	6.9	1.5		1.7	344	167	
	Total fusion	7.7	0.2					
	Cocos Ridge							
02M0139	*SO144/3-84DR-2 (whole rock: incremental heating)*							
	Plateau age	13.3	0.3	100	1.4			0.034
	Normal isochron	12.7	0.5		1.6	315	16	
	Inverse isochron	13.1	0.4		0.6	307	12	
	Total fusion	13.2	0.3					
	Cocos Island							
02M0126	*SO144/3-Cocos-11 (whole rock: incremental heating)*							
	Plateau age	1.9	0.03	100	0.1			0.7
	Normal isochron	1.9	0.04		0.2	294	24	
	Inverse isochron	1.9	0.04		0.2	295	24	
	Total fusion	1.9	0.04					
	Cocos Island							
02M0127	*SO144/3-Cocos-13 (whole rock: incremental heating)*							
	Plateau age	1.5	0.04	100	1.0			0.3
	Normal isochron	1.6	0.1		3.1	169	244	
	Inverse isochron	1.5	0.1		1.3	343	241	
	Total fusion	1.5	0.1					
	Cocos Island							
02M0128	*SO144/3-Cocos-15 (whole rock: incremental heating)*							
	Plateau age	2.2	0.03	100	0.2			4.5
	Normal isochron	2.2	0.04		1.4	284	24	
	Inverse isochron	2.2	0.04		0.2	297	21	
	Total fusion	2.2	0.03					
	Cocos Island							
02M0124	*SO144/3-Cocos-24 (whole rock: incremental heating)*							
	Plateau age	2.1	0.02	100	0.4			5.5
	Normal isochron	2.2	0.03		0.9	293	29	

	Inverse isochron	2.1	0.03		0.4	304	30	
	Total fusion	2.1	0.03					
	Cocos Island							
02M0125	*SO144/3-Cocos-26 (whole rock: incremental heating)*							
	Plateau age	2.2	0.1	100	0.7			0.4
	Normal isochron	2.3	0.1		0.4	205	94	
	Inverse isochron	2.3	0.1		0.6	230	95	
	Total fusion	2.2	0.1					
	Cocos Island							
02M0129	*SO144/3-Cocos-33 (whole rock: incremental heating)*							
	Plateau age	2.2	0.1	100	0.2			
	Normal isochron	2.2	0.2		0.1	298	9	0.2
	Inverse isochron	2.2	0.2		0.1	299	9	
	Total fusion	2.2	0.1					
	Cocos Island							
02M0130	*SO144/3-Cocos-35 (whole rock: incremental heating)*							
	Plateau age	2.3	0.2	100	0.3			0.04
	Normal isochron	2.1	0.4		0.01	323	54	
	Inverse isochron	2.1	0.4		0.01	323	54	
	Total fusion	2.2	0.3					

Subscripts indicate radiogenic (r), atmospheric (a), potassium derived (K), Calcium derived (Ca).
Ages are calculated using TCR monitor age of 28.34 Ma (5).
$^{40}Ar/^{39}Ar$ ages were measured using the argon laser probe at Vrije University Amsterdam.
Details of sample preparation and analytical procedures are described in detail elsewhere (3).
Analytical data and isochron/plateau plots are available as Supplementary Information.
$\lambda = 5.53 \times 10^{-10}$/yr
Correction factors:
$^{40}Ar/^{39}Ar$ (K) = 0.00086
$^{36}Ar/^{37}Ar$ (Ca) = 0.00026
$^{39}Ar/^{37}Ar$ (Ca) = 0.00067