Data Repository Item D – Colorado Creek Lava Geochronology

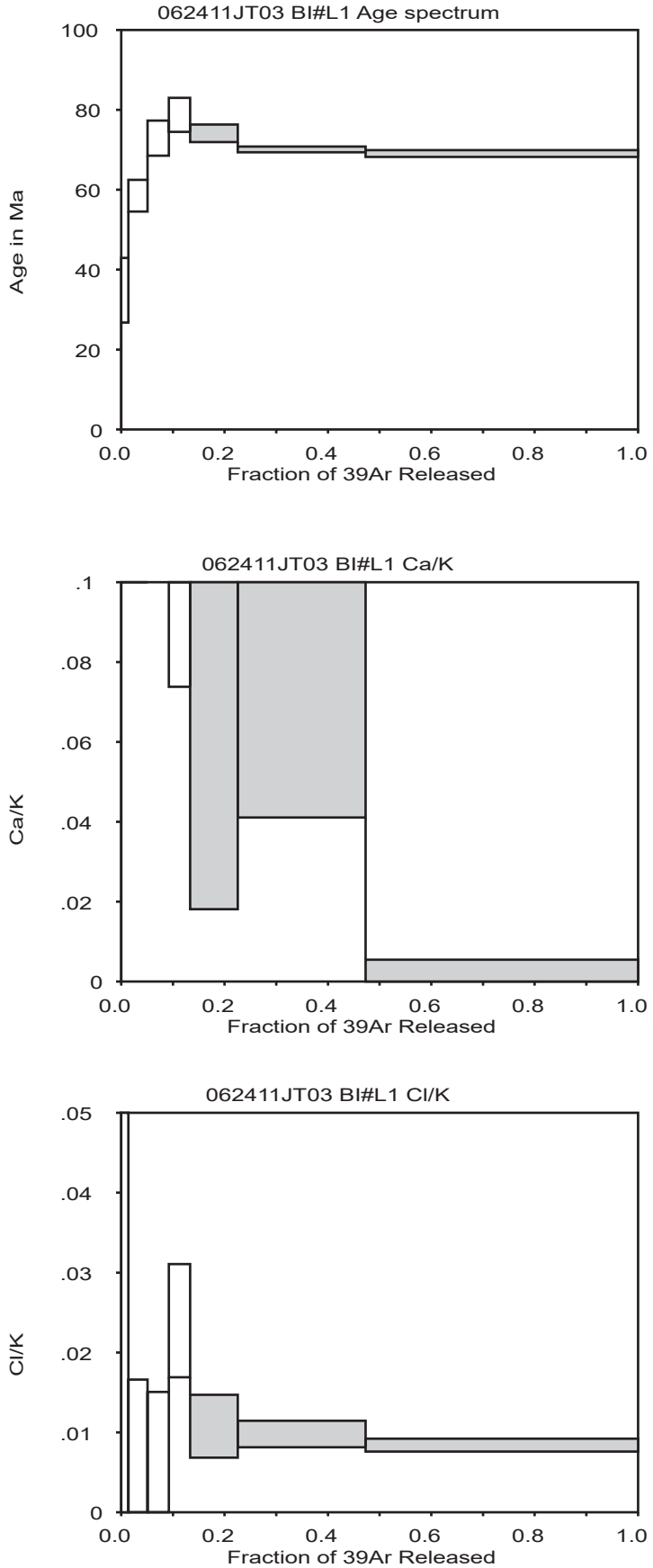
A biotite separate from sample 062411JT03 produced a slightly upward stair stepping age spectra which is common with samples that have undergone loss and alteration (Fig. 10A). The low temperature steps also had high atmospheric contents which is also an indicator of loss/alteration. The integrated age (69.5 ± 0.7 Ma) is within error of the plateau age (69.9 ± 1.1 Ma). We prefer the plateau age of 69.5 ± 0.7 Ma because of inferred loss/alteration affecting the first four heating step age determinations. No isochron age determination was possible due to the generally homogenous radiogenic content of the steps used for the plateau age determination.

A whole rock separate from sample 062411JT04 produced a slightly upward stair stepping age spectra which is common with samples that have undergone loss and alteration (Fig. 10A). The low temperature steps also had high atmospheric contents which is also an indicator of loss/alteration. The integrated age (67.2 ± 0.5 Ma) is within error of the plateau age (68.1 ± 0.7 Ma). We prefer the plateau age of 68.1 ± 0.7 Ma because of inferred loss/alteration affecting the first 4 heating step age determinations. No isochron age determination was possible due to the generally homogenous radiogenic content of the steps used for the plateau age determination.

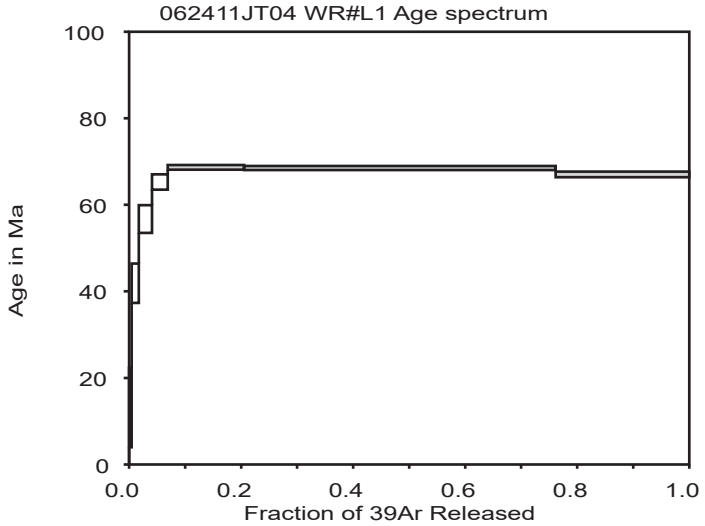
A biotite separate from sample 062411JT05 was analyzed. The lowest temperature step had high atmospheric contents which is an indicator of loss/alteration (Fig. 10A). The criteria for a plateau age determination was not met because the MSWD of the chosen steps were slightly over 2.50 (MSWD = 2.56). The integrated age (70.6 ± 0.8 Ma) is within error of both the plateau age (70.8 ± 1.2 Ma) and the isochron age (71.9 ± 0.9 Ma). We prefer the plateau age of 70.8 ± 1.2 Ma because of the large error on the initial $^{40}Ar/^{36}Ar$ gas isochron gas component regression.

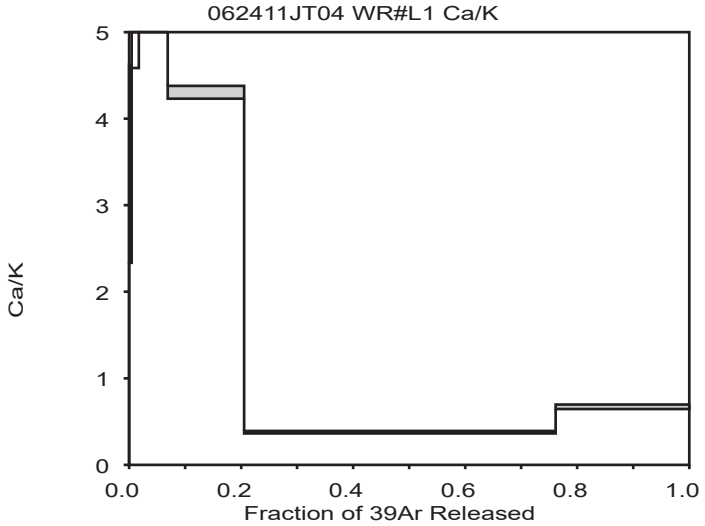
A whole rock separate from sample 062411JT06 was analyzed. The sample produced a slightly upward stair stepping age spectra which is common with samples that have undergone loss and alteration (Fig. 10A). The low temperature steps also had high atmospheric contents which is also an indicator of loss/alteration. The integrated age (67.0 ± 0.6 Ma) is within error of the plateau age (68.2 ± 0.7 Ma). We prefer the plateau age of 68.2 ± 0.7 Ma because of inferred loss/alteration affecting the first 3 heating step

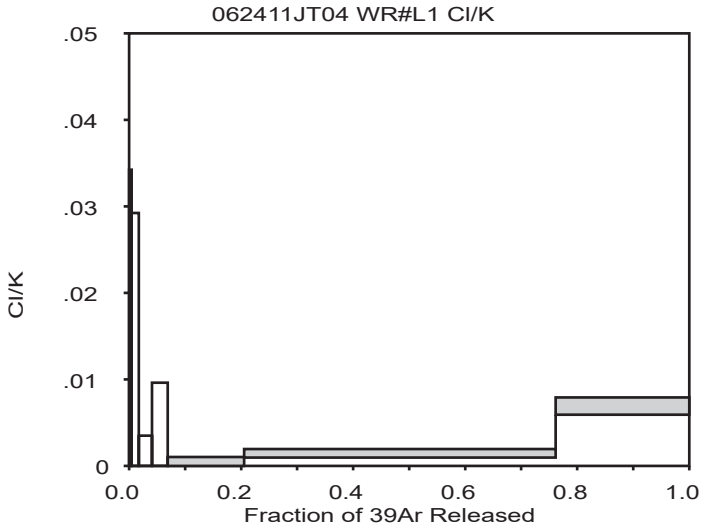
age determinations. No isochron age determination was possible due to the generally homogenous radiogenic content of the steps used for the plateau age determination.



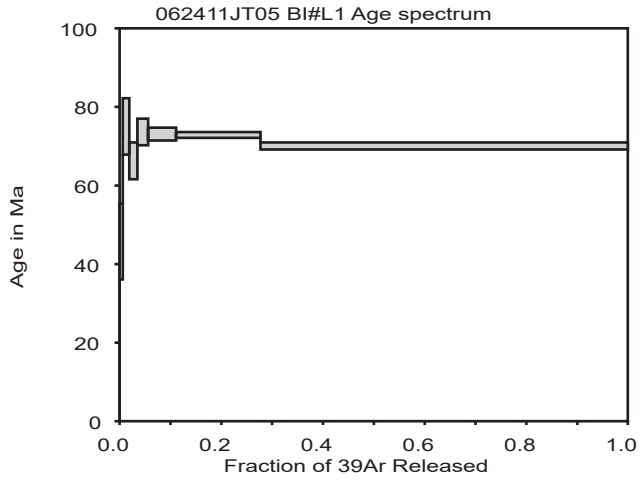
DRD-A. Plots showing ^{40}Ar-^{39}Ar analytical results from Colorado Creek volcanics sample 062411JT03 WR#1 . MSWD—mean square of weighted deviates.

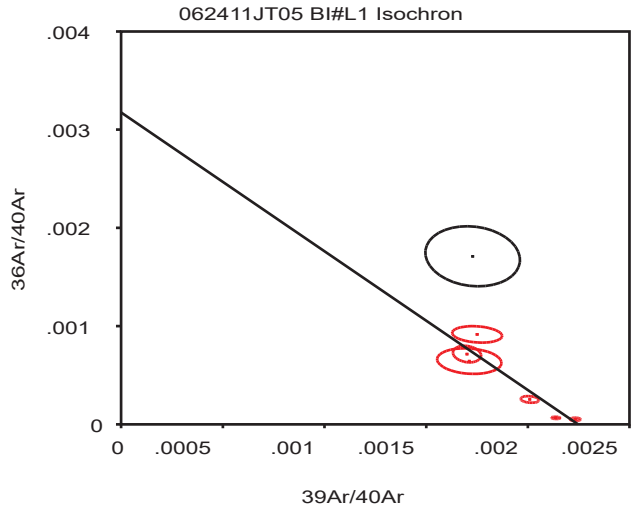


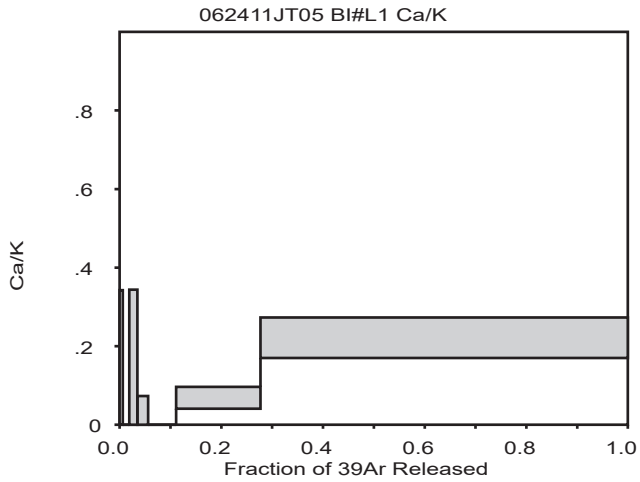


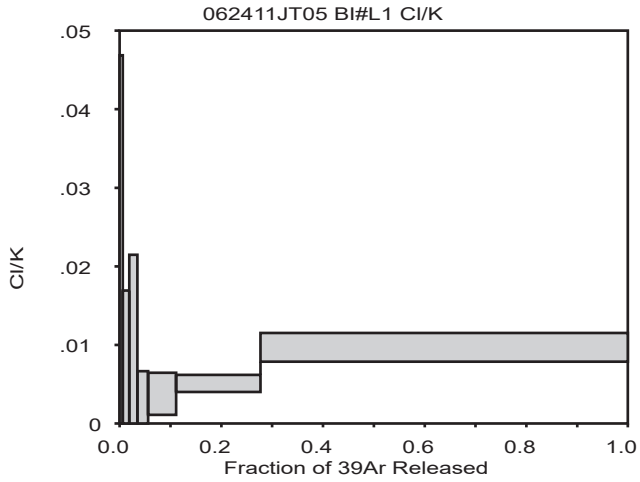


DRD-B. Plots showing ^{40}Ar-^{39}Ar analytical results from Colorado Creek volcanics sample 062411JT04 WR#1 . MSWD—mean square of weighted deviates.

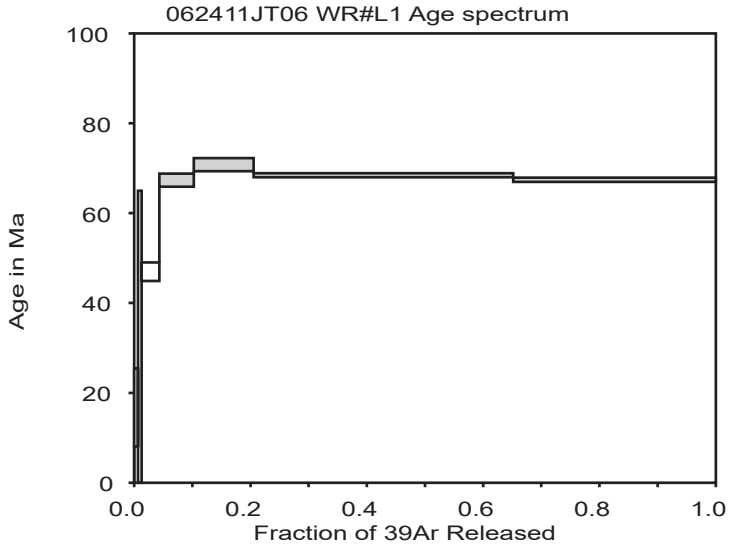


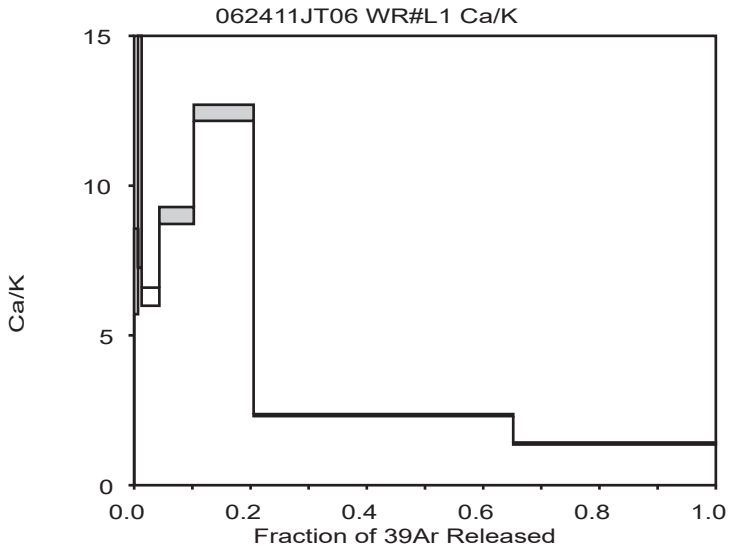


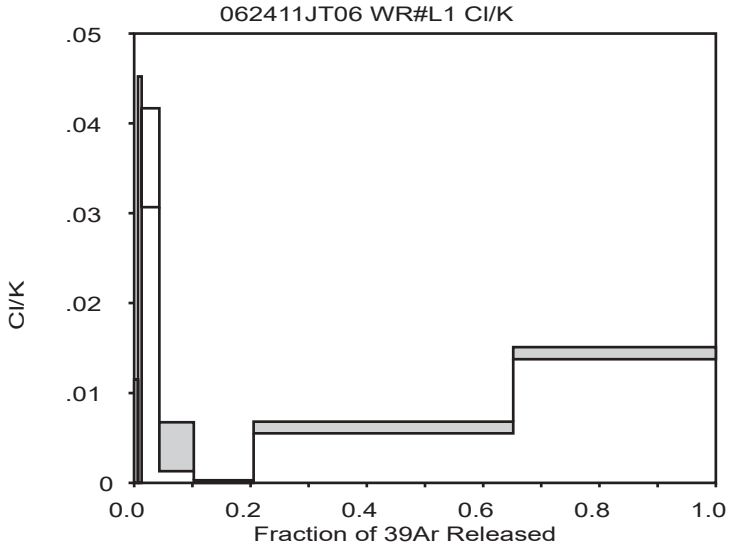




DRD-C. Plots showing ^{40}Ar-^{39}Ar analytical results from Colorado Creek volcanics sample 062411JT05 WR#1 . MSWD—mean square of weighted deviates.







DRD-D. Plots showing ^{40}Ar-^{39}Ar analytical results from Colorado Creek volcanics sample 062411JT06 WR#1 . MSWD—mean square of weighted deviates.