$^{40}Ar/^{39}Ar$ Age of the Jurassic North Mountain Basalt, Southwestern Nova Scotia[1]

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Two whole-rock samples of the Jurassic North Mountain Basalt have been dated using the $^{40}Ar/^{39}Ar$ method. A single sample of fresh, medium-grained, holocrystalline basalt from the lower flow unit of this thick (i.e., 400 m) sequence gave coincident plateau and isochron correlation ages of 201 ± 2.5 Ma, in agreement with a zircon U-Pb age of 202 ± 1 Ma for this same flow unit. This $^{40}Ar/^{39}Ar$ age contrasts with earlier conventional K-Ar whole-rock ages of ca. 192 Ma for the North Mountain Basalt, which are similar to other K-Ar and Ar/Ar ages for correlative basalts of eastern North America. The second dated sample is a zeolite-bearing basalt from the middle flow unit of the North Mountain Basalt. This sample gave a discordant age spectrum with excess argon, but the isochron correlation age of 206 Ma, albeit with a large error (i.e., 56 Ma), is similar to that for the fresh sample. The data indicate that reliable whole rock $^{40}Ar/^{39}Ar$ ages for the basalts are attainable, but that fresh samples must be used. In light of this, it is suggested that the younger 192 Ma ages may reflect a widespread thermal event related to zeolite formation.

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