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# $^{40}Ar/^{39}Ar$ geochronology of volcanic rocks associated with Be mineralization in the Spor Mountain Formation, Utah, USA

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The Be deposit at Spor Mountain, Utah, USA, is the largest volcanogenic Be deposit in the world, accounting for the majority of global Be production. The Spor Mountain Formation (SMF) includes the lower Be tuff member (a clast-rich tuffaceous breccia) and the overlying rhyolite porphyry member [1]. Previous geochronology of these units includes sanidine K-Ar and $^{40}Ar/^{39}Ar$ dates ranging from 21.73 ± 0.19 Ma to 21.2 ± 0.9 Ma [2, 3], zircon fission track dates of 21.5 ± 1.1 Ma to 18.1 ± 4.6 Ma (the latter from one zircon grain) [2], and zircon SHRIMP-RG U/Pb dates that yielded a bimodal distribution with pooled weighted means of 25.59 +0.29/-0.45 Ma and 20.84 +1.29/-0.64 Ma [1]. (All dates are as reported, and do not include decay constant uncertainties.) Ayuso et al. [1] interpreted the older population to be the age of the Be tuff member and attributed the younger to hydrothermal activity. We report new $^{40}Ar/^{39}Ar$ data obtained at the USGS Denver Argon Geochronology Laboratory for sanidine from samples of both members of the SMF, as well as the fully re-reduced results of Adams et al. [3] using consistent $^{40}K$ decay [4] and monitor age (FCs, [5]) parameters. Our preliminary results and the re-reduced data of Adams et al. [3] yield dates for the SMF ca. 22–21 Ma. The lack of scatter in the $^{40}Ar/^{39}Ar$ data likely indicates rapid cooling without any subsequent protracted partial loss of $^{40}Ar^*$ (e.g., due to hydrothermal activity). The younger (ca. 21 Ma) dates may be the age of the Be tuff, requiring the older population of zircons to be inherited.

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