

Intercalibration of $^{40}\text{Ar}/^{39}\text{Ar}$ of Alder Creek sanidine monitor with Fish Canyon and Bishop Tuff sanidine

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Intercalibration of monitor standards is important for the application of high-precision $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology to problems in Earth history. We rely on these monitor standards to trace both reproducibility in a single laboratory and systematic bias between laboratories and methods. Here we report new measurements of Alder Creek sanidine co-irradiated with Fish Canyon and Bishop Tuff sanidine. These standards have been measured in multiple laboratories and have additional chronological constraints from U/Pb zircon and astrochronology. Samples analyzed in preparation for this abstract were co-irradiated at the USGS TRIGA reactor in Denver several years prior to analyses, and no corrections were made for nuclear interferences. We measured argon in multiple-collector mode on a newly-installed Isotopx NGX noble gas mass spectrometer after fusion of weighed single grain sanidine crystals with a CO_2 laser. The mass spectrometer is equipped with five fixed detectors with argon isotope spacing, including four Faraday collectors with ATONA amplifiers and an ion counting multiplier in the ^{36}Ar (L2) position. The sensitivity of the mass spectrometer is $1.6\text{E-}3$ A/Torr, the rise rate of ^{40}Ar is $2\text{e-}13$ ccSTP/min and the background on m/e 36 is <10 cps.

Measurements of unknowns have just started and are ongoing, the number of analyses is small, and much more scrutiny will be required to finalize the results. But initial results on the RFCAC of 0.04179 ± 0.00025 (1σ SD) is consistent with recently reported measurements from Niespolo et al. (2017). Initial results on the RBTAC of 1.540 ± 0.057 , and assuming an age of Bishop Tuff of 0.7671 ± 0.0009 Ma (Crowley et al. 2007), gives an estimate of 1.181 ± 0.043 Ma for the age of Alder Creek.

Crowley, JL, et al. (2007). *Geology* **35**, 1123-1126.

Niespolo, EM, et al. (2016). *Quat. Geochronol.* **39**, 205-213.