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The Tail of Ontong Java Plateau: Insights from New $^{40}Ar/^{39}Ar$ Ages in the West Pacific Seamount Province

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Though models for hotspot volcanism suggest a rising plume head forming large igneous provinces (LIP) followed by a time-transgressive volcanic track, the Ontong Java Plateau (OJP)—the most voluminous LIP in the geologic record—lacks such an obvious volcanic track. Additionally, current absolute plate motion (APM) models are confined by the age of subduction associated with the Louisville and Hawaiian seamount trails, thus APM models cannot easily be extended earlier than 80 Ma. Currently available APM models would require an unlikely high amount of plume motion to make Louisville a clear candidate for the associated hotspot track for the OJP. Seamounts in the West Pacific Seamount Province host hypothesized extensions of Rurutu-Arago and Samoa hotspots. If accurate, this extension of the hotspot tracks would increase the precision and resolve data gaps in the Pacific APM models during the 80-120 Ma time interval. Our goal is to address the association between OJP and the Louisville Hotspot Trail by updating the 80-120 Ma Pacific APM model with a high-resolution dataset comparing age and isotopic compositions from seamounts that represent the hypothesized extensions of Rurutu-Arago and Samoa hotpots. Here, we present new high-precision $^{40}Ar/^{39}Ar$ ages from seamounts in the West Pacific Seamount Province sampled during Expedition KM2201. Hornblende, plagioclase, clinopyroxene and/or groundmass separates from recovered basalt were picked, acid-leached and processed. Following sample preparation, samples were analyzed on the ARGUS IV noble gas multi-collector mass spectrometer in the $^{40}Ar/^{39}Ar$ Geochronology Lab at Oregon State University.