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NEW $^{40}Ar/^{39}Ar$ AGE DETERMINATIONS FOR TWO TUFFS IN THE PIUMA (UPPER) MEMBER OF THE CONTINENTAL SESPE FORMATION, CENTRAL SANTA MONICA MOUNTAINS, CALIFORNIA

Populations of K-feldspar crystals from two tuffs 85 and 150 m above the base of the Sespe Fm. (SF) Piuma Mbr. yielded numerous dates > 50 Ma. The youngest dates, thought to represent the maximum ages for their respective tuffs, are 27.2 $\pm$ 0.2 Ma (late Oligocene) for the lower tuff (LT) and 21.1 $\pm$ 0.2 Ma (earliest Miocene) for the upper tuff (UT). The LT lies 65 m above early Arikareean land mammals (EALMs) and 11 m below the lower Vaquerosian Carbon Canyon Tongue (CCT) of the transgressive marine Vaqueros Formation (VF). The upper tuff lies above the CCT and below early Hemingfordian land mammals.

The LT is similar in age to other tuffs in southern CA that are bracketed by EALMs and include 1) the Willard Canyon Tuff (270 m below SF-VF contact, South Mtn., Ventura Co., 28.2 $\pm$ 0.2 Ma), 2) a tuff in the SF Upper Mbr. (roughly 15 m below VF tongue, Alamos Canyon, Simi Valley, Ventura Co., Chron C9R), and 3) a bentonite bed in the Otay Fm. Sandstone-Mudstone Mbr. (San Diego Co., 28.9 Ma).

In addition to the phenocrysts, each tuff also contains a large population of older K-feldspar crystals possibly representing detritus from the source of the SF in present-day Arizona. The ages of the crystals in the LT are distinctly older (av. = 60.5 Ma) than those from the UT (av. = 32.2 Ma), suggesting a change in provenance of the Sespe paleodelta between the two eruptions.