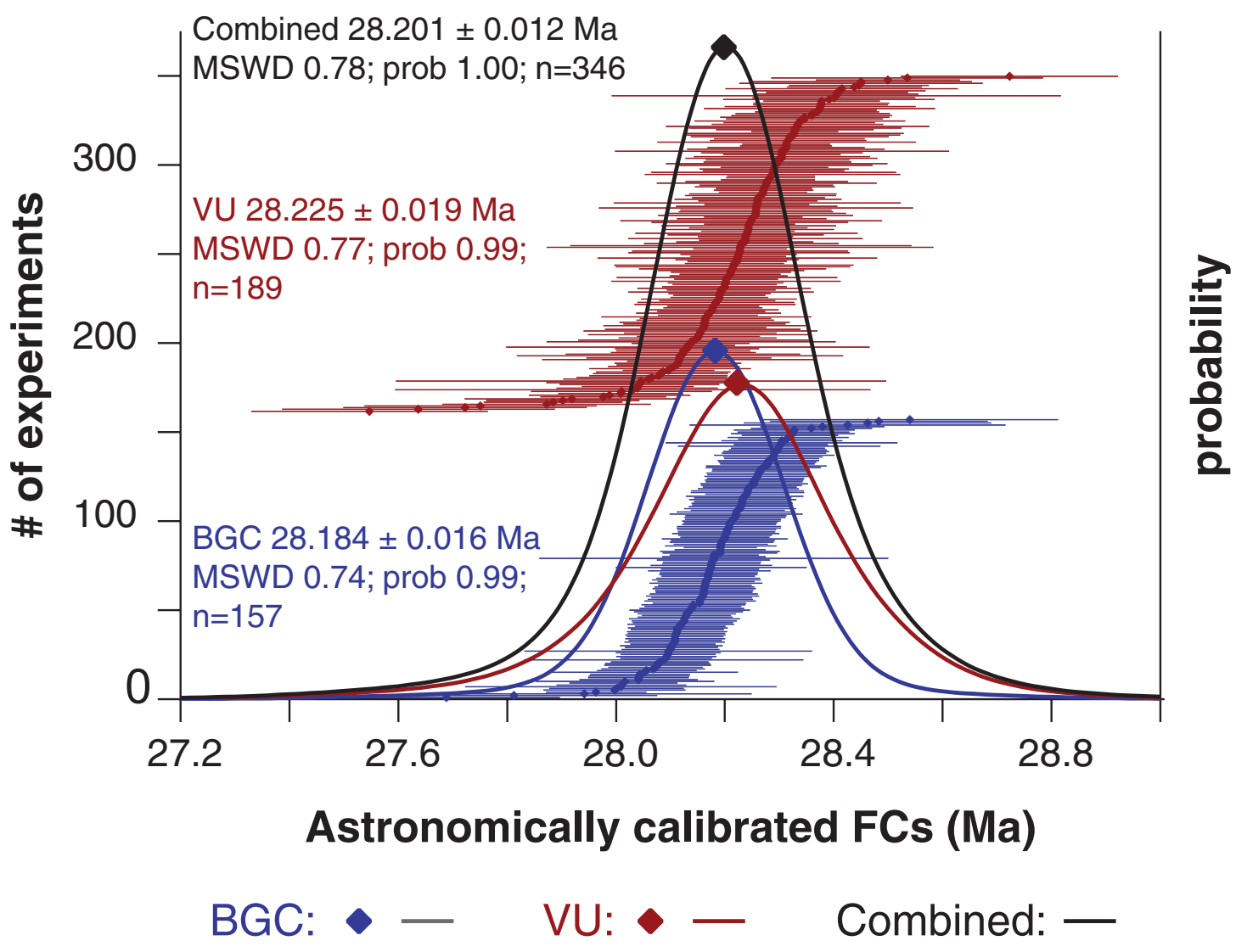

Fig. 2. Astronomically calibrated FCs age. The $^{40}Ar/^{39}Ar$ ages of the ash layers are converted to an astronomically calibrated age for FCs by using the Melilla sanidines as astronomically dated standards and the FCs as the unknown. Instead of doing this exercise for each tephra horizon separately, we included all reliably (both isotopic and astronomical) dated tephra to prevent an a priori bias to one of the astronomically dated tephra. However, the calibrated age is an inverse-variance weighted mean age; thus, tephra mes4, with the highest number of replicate analyses and the most precise data, dominates the final outcome. We include only the single-crystal fusion data (displayed here with 1σ analytical error), and ages with $P > 0.1$. Incremental heating experiments on selected sanidine fractions confirm the thermally undisturbed nature of the samples (*14*). We calculate an astronomically calibrated FCs age for each experiment propagating only analytical uncertainties. The weighted mean FCs age and standard analytical error for BGC and VU data are displayed separately and as a combined-age probability diagram. The 28.201 ± 0.012 Ma age for FCs is converted to an intercalibration factor of R^{FCs}_{astro} of 4.3644 ± 0.0018 for a T_{astro} at 6.500 Ma. This translates to 28.201 ± 0.046 Ma, including decay-constant uncertainties and the uncertainty in the astronomical ages of ±10 ky.