

Martin, E.L., Collins, W.J., and Spencer, C.J., 2019, Laurentian origin of the Cuyania suspect terrane, western Argentina, confirmed by Hf isotopes in zircon: GSA Bulletin, <https://doi.org/10.1130/B35150.1>.

## **Data Repository**

Supplementary File DR1

Supplementary File DR2

# Supplementary File DR1

## PREVIOUS ZIRCON U-Pb ANALYSIS OF SAMPLES USED IN THIS STUDY

Samples from Cuyania were previously analyzed for U-Pb and the results of samples from sample ISOS1 and EMP were published in Finney et al. (2005) and Gleason et al. (2007). Cuyanlian samples not published in Finney (2007) or Gleason et al. (2007) were analyzed for U-Pb following the methods of Gleason et al., (2007) (sample SF7, SF8, ULC, LLC, SF13, VAC, SF4, SF5, SF14).

La Laja and San Isidro Olistolith samples (LLFM1, LLFM2, and ISOS1) were analyzed for U-Pb following the methods outlined for sample 16021, in the same zircon domain as the Lu-Hf analysis spots to provide corresponding grain age information for the Lu-Hf data. The source of the corresponding U-Pb data is reported in each figure caption.

## PRECISION, AGE CALCULATIONS, AND PROPAGATED UNCERTAINTY

Ages were calculated using Isoplot R (Ludwig, 2003; Vermeesch, 2018) with mean ratios and propagated (analytical and systematic) uncertainties and error correlations exported from Iolite. To evaluate whether additional external uncertainty should be applied to the results, the intra-session reproducibility of secondary standard GJ1 was evaluated. The weighted average of the  $^{206}\text{Pb}/^{238}\text{U}$  and  $^{207}\text{Pb}/^{206}\text{Pb}$  ratios were calculated and additional uncertainty required to make the secondary reference a single population (MSWD = 1) for each ratio was determined (Quinn et al., 2016). Propagated uncertainties from Iolite were sufficient to allow GJ1 analyzed on both the Q-ICPMS and the MC-ICPMS, with MSWD values of 0.43 and 0.58 indicating that the ages are under-dispersed with respect to the stated analytical uncertainties and that the uncertainties may be overestimated.

To evaluate whether additional external uncertainty should be applied to  $^{177}\text{Hf}/^{176}\text{Hf}$  ratios, the intra-session reproducibility of secondary standard 91500 or Temora 2 was evaluated. Ratios and internal uncertainties were exported from Iolite. The weighted average of the  $^{177}\text{Hf}/^{176}\text{Hf}$  ratios was calculated and additional uncertainty added in quadrature required to make the secondary reference a single population (MSWD = 1) for each ratio was determined (Quinn et al., 2016). In the case of Temora, 2 analyzed at GEMOC, Macquarie University, 2% external uncertainty was required to be added to make the secondary standard form a single population. In the case of 91500 analyzed at the GEOHistory Facility, Curtin University, analyses from all sessions formed a single population (MSWD = 0.95) and no additional external uncertainties were applied.

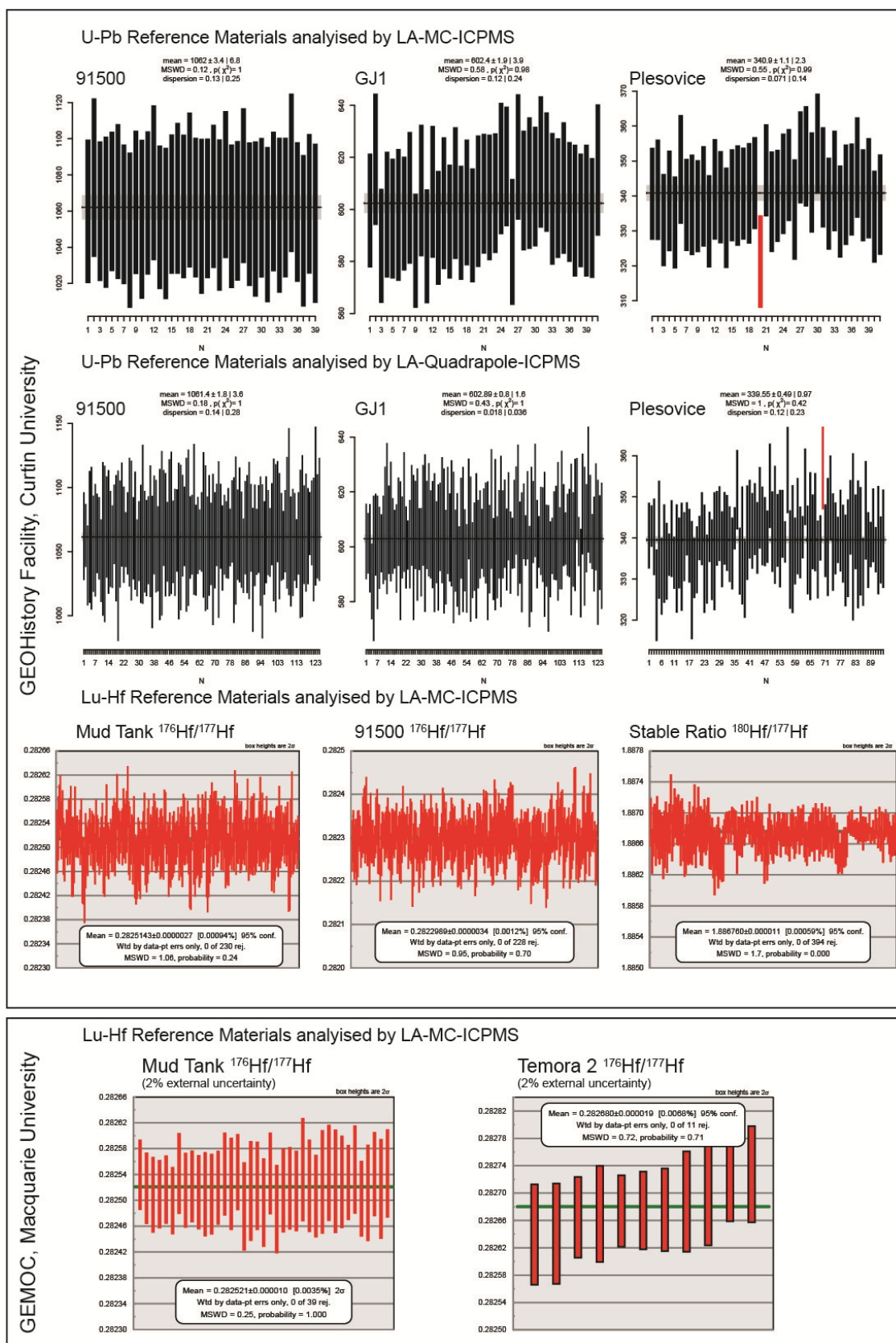


Figure DR3. U-Pb and Lu-Hf data for Reference materials used during analytical session

## REFERENCES CITED

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