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Outer forearc uplift and exhumation during high-flux magmatism: evidence from detrital zircon geochemistry of the Nacimiento forearc basin, California

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Supplementary Figures

Figure S1A (page 1): zircon trace element discriminant plots of Nacimiento forearc basin detrital zircon.

Figure S1B (page 2): plots of zircon trace element ratios vs. age for detrital zircon from Nacimiento forearc basin sandstone.

Figure S1C−F (page 3−6): plots of fractionation-corrected U/Yb vs. age for detrital zircon from C) sandstone samples with upper Cenomanian-Santonian maximum depositional ages, D) sandstone samples with upper Albian-lower Cenomanian maximum depositional ages, E) sandstone samples with lower Albian maximum depositional ages, and F) sandstone samples with Valanginian maximum depositional ages.

References:

Grimes, C.B., Wooden, J.L., Cheadle, M.J., and John, B.E., 2015, "Fingerprinting" tectono-magmatic provenance using trace elements in igneous zircon: Contributions to Mineralogy and Petrology, v. 170, p. https://-doi.org/10.1007/s00410-015-1199-3.

Barth, A.P., Tani, K., Meffre, S., Wooden, J.L., Coble, M.A., Arculus, R.J., Ishizuka, O., and Shukle, J.T., 2017, Generation of Silicic Melts in the Early Izu-Bonin Arc Recorded by Detrital Zircons in Proximal Arc Volcaniclastic Rocks From the Philippine Sea: Geochemistry Geophysics Geosystems, v. 18, p. 3576–3591, https://doi.org/10.1002/2017GC006948.

Figure S1A: zircon trace element discriminant plots of Nacimiento forearc basin detrital zircon. Nb/Yb vs. U/Yb plot displays fewer data points because Nb was not measured in all analysis sessions, and Nb data does not exist for all grains. Discriminant fields traced from data presented in Grimes et al. (2015).

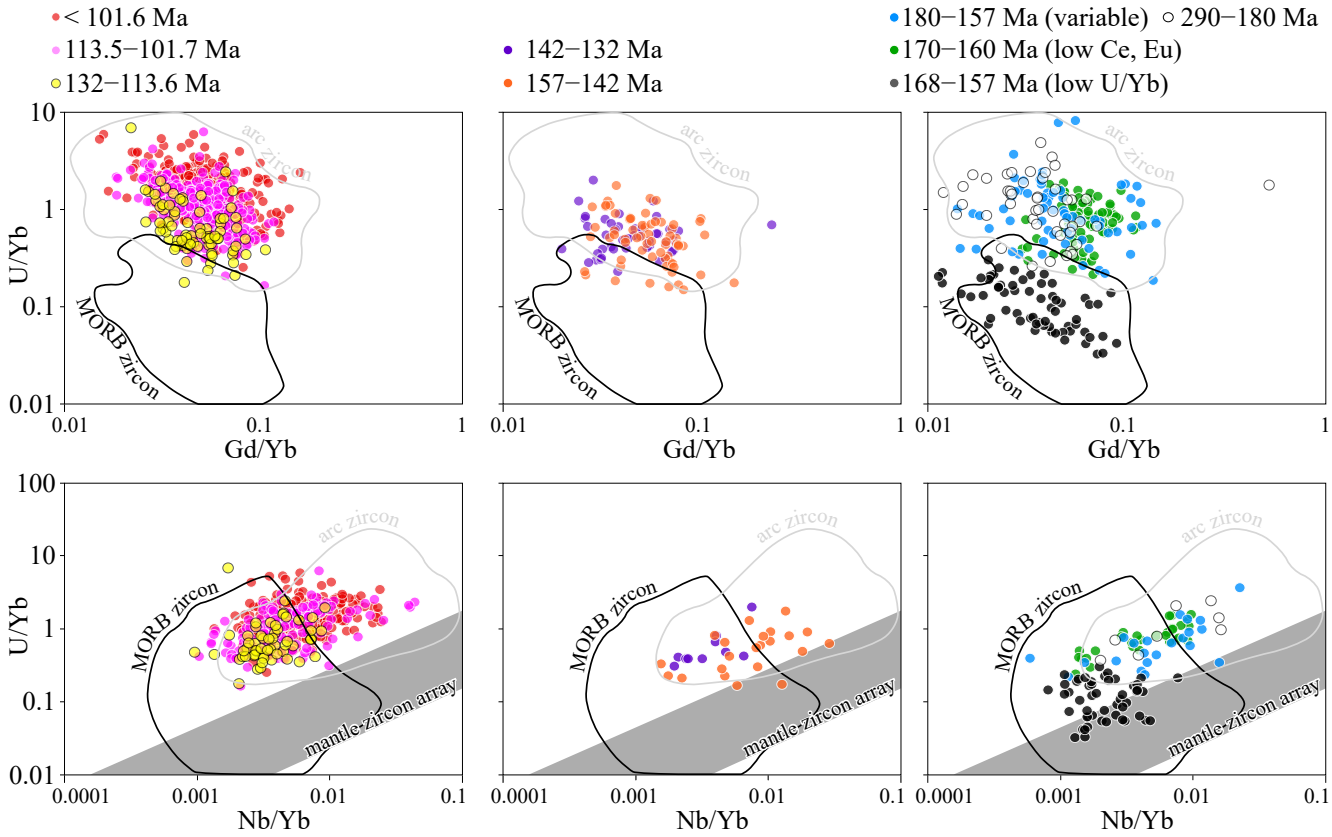

Figure S1B: plots of zircon trace element ratios vs. age for detrital zircon from Nacimiento forearc basin sandstone.

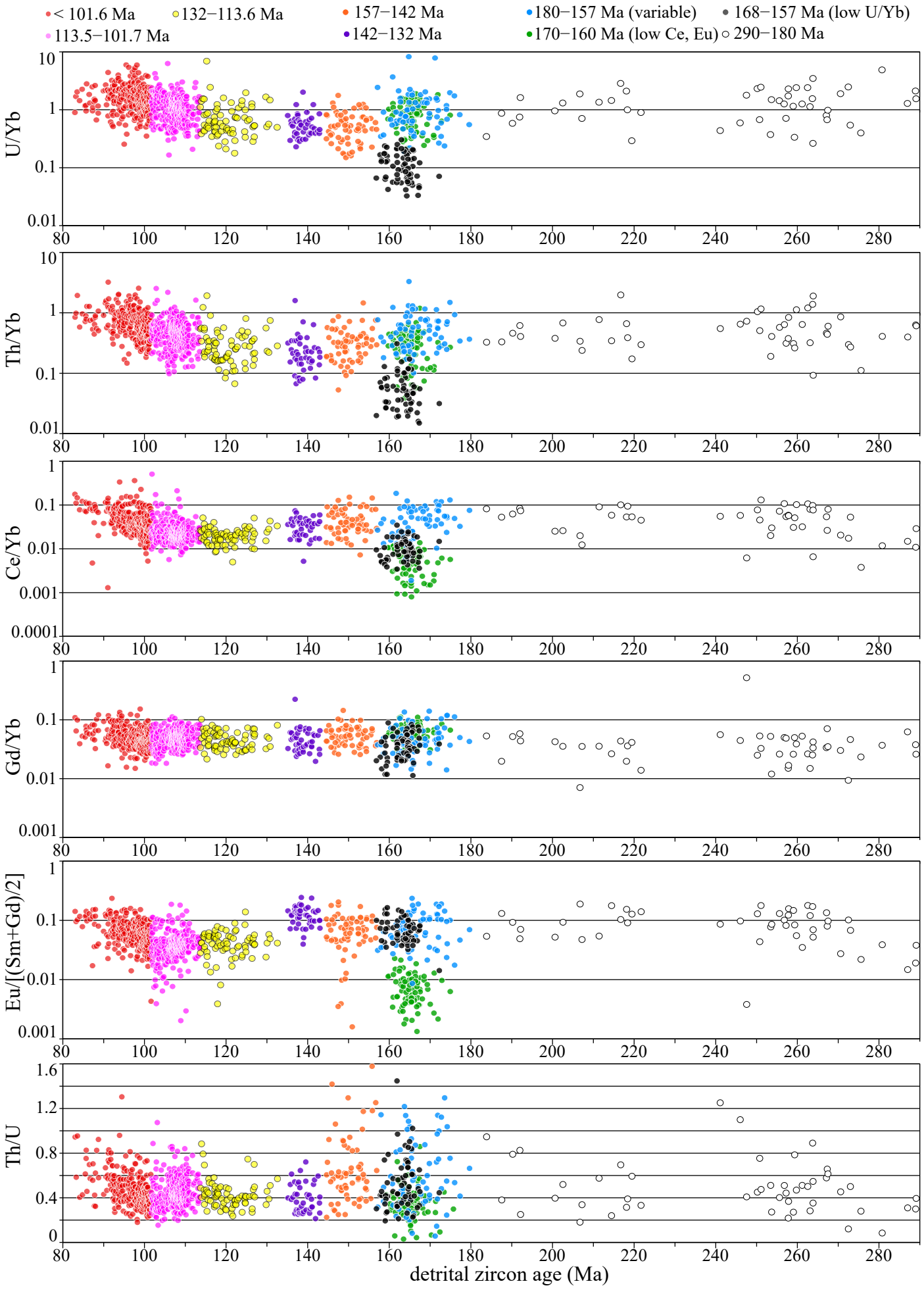

Figure S1C: detrital zircon age versus fractionation-corrected U/Yb for upper Cenomanian to Santonian Nacimiento forearc basin sandstone samples. Boundaries for high, medium, and low U/Yb modified from Barth et al. (2017). Cordilleran grains are < 300 Ma; MDA–maximum depositional age.

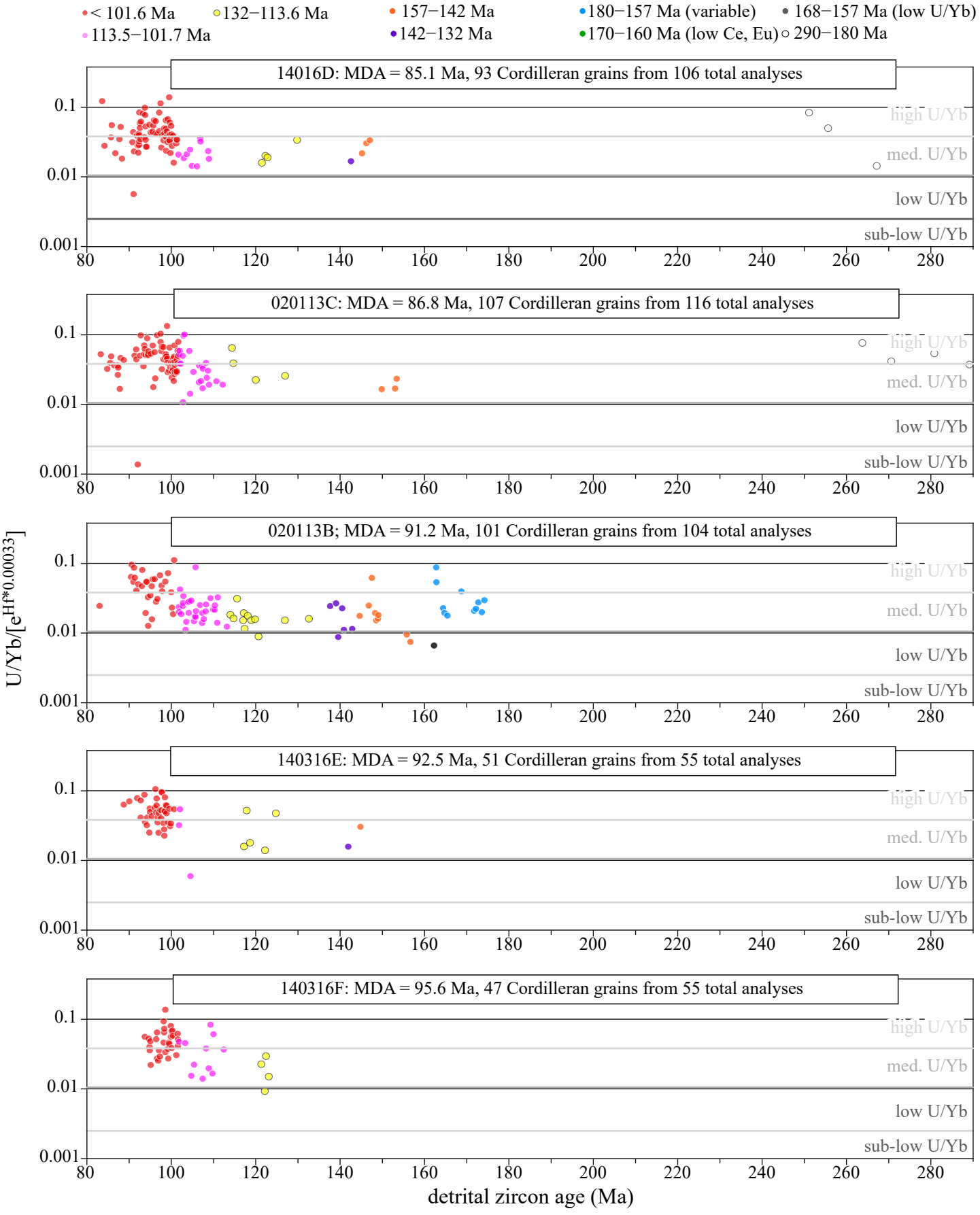

Figure S1D: detrital zircon age versus fractionation-corrected U/Yb for upper Albian to lower Cenomanian Nacimiento forearc basin sandstone samples. Boundaries for high, medium, and low U/Yb modified from Barth et al. (2017). Cordilleran grains are < 300 Ma; MDA–maximum depositional age.

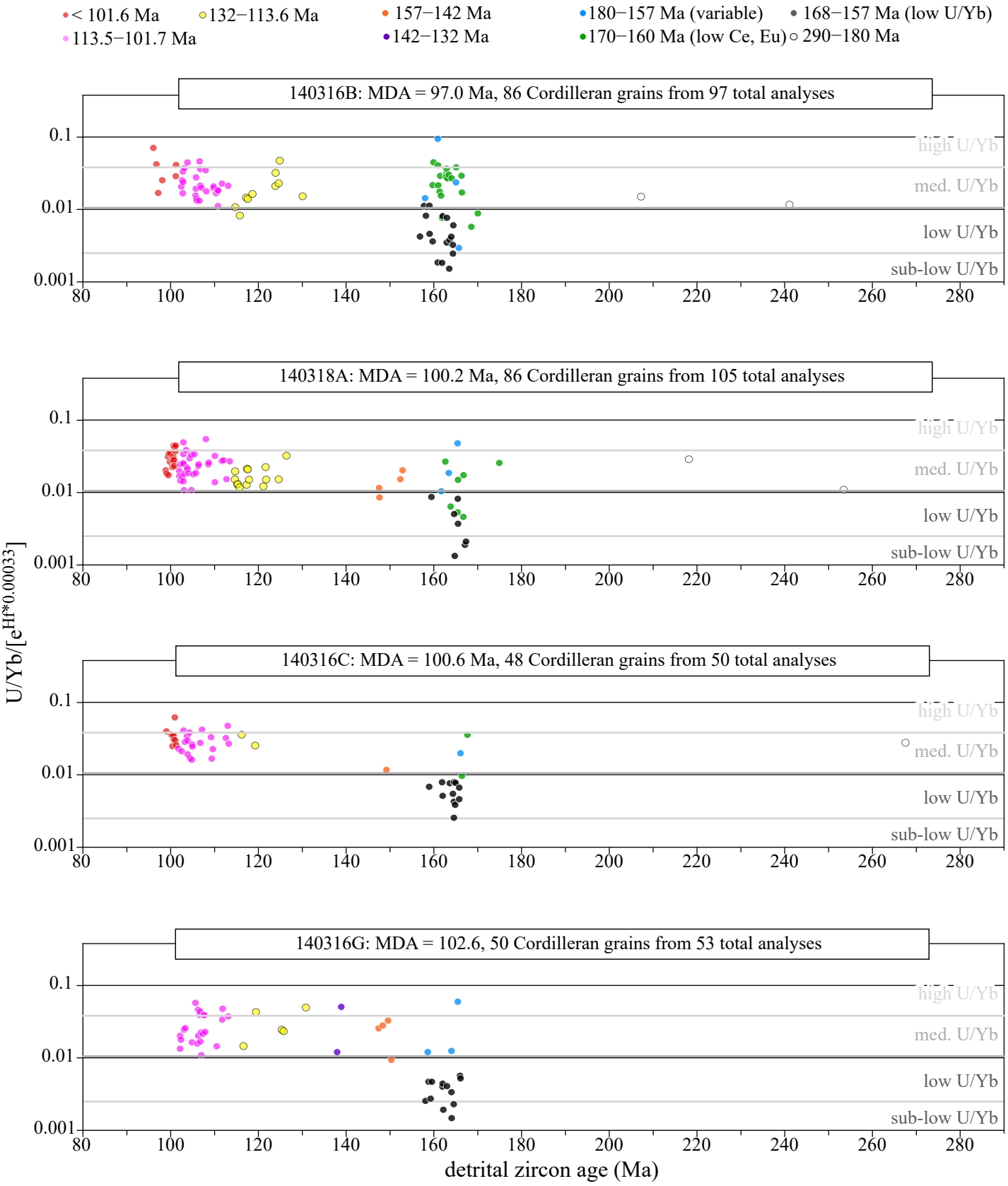

Figure S1E: detrital zircon age versus fractionation-corrected U/Yb for lower Albian Nacimiento forearc basin sandstone samples. Boundaries for high, medium, and low U/Yb modified from Barth et al. (2017). Cordilleran grains are < 300 Ma; MDA–maximum depositional age.

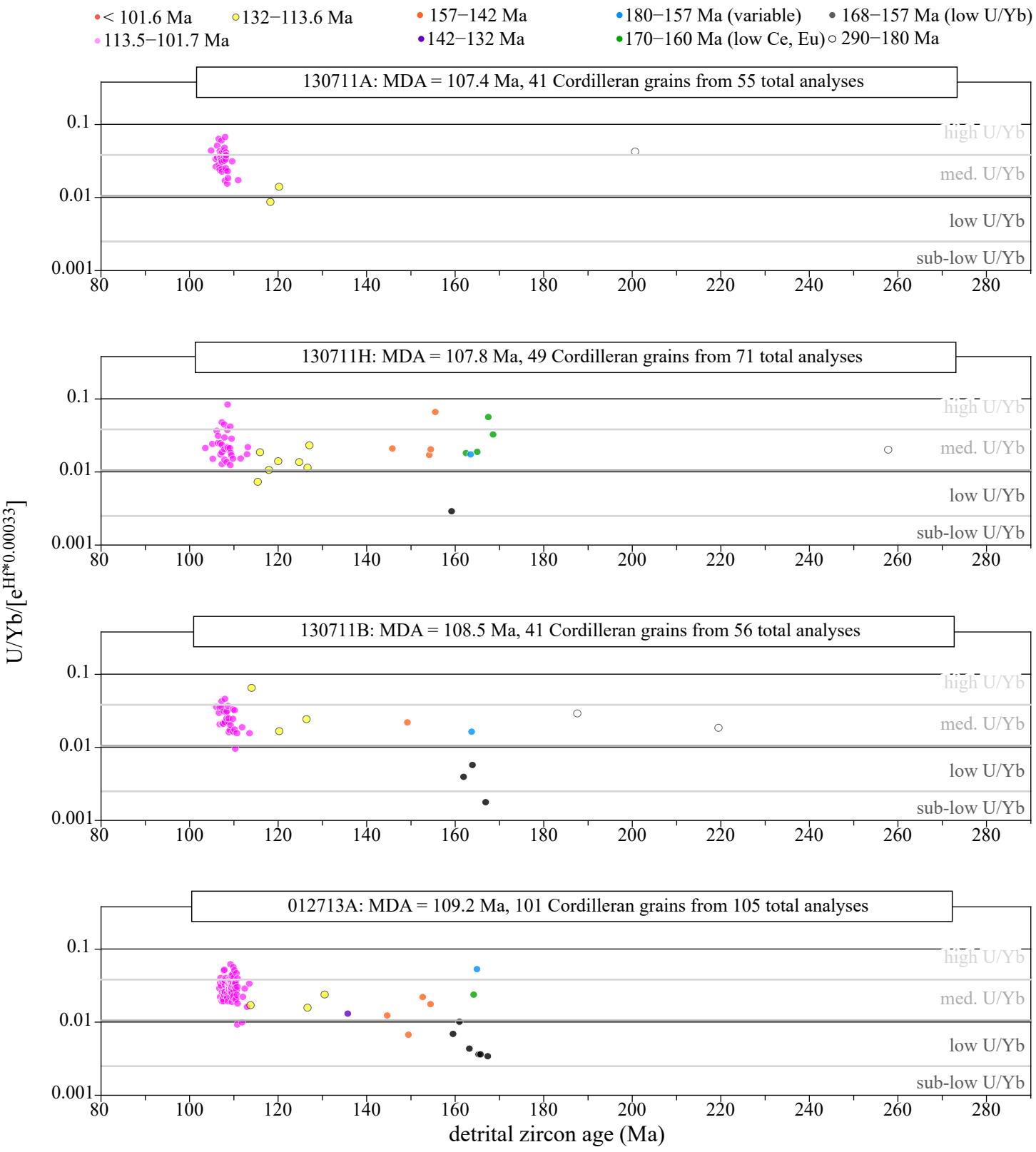

Figure S1F: detrital zircon age versus fractionation-corrected U/Yb for Valanginian Nacimiento forearc basin sandstone samples. Boundaries for high, medium, and low U/Yb modified from Barth et al. (2017). Cordilleran grains are < 300 Ma; MDA–maximum depositional age.