

## **GSA Data Repository Item 2018362**

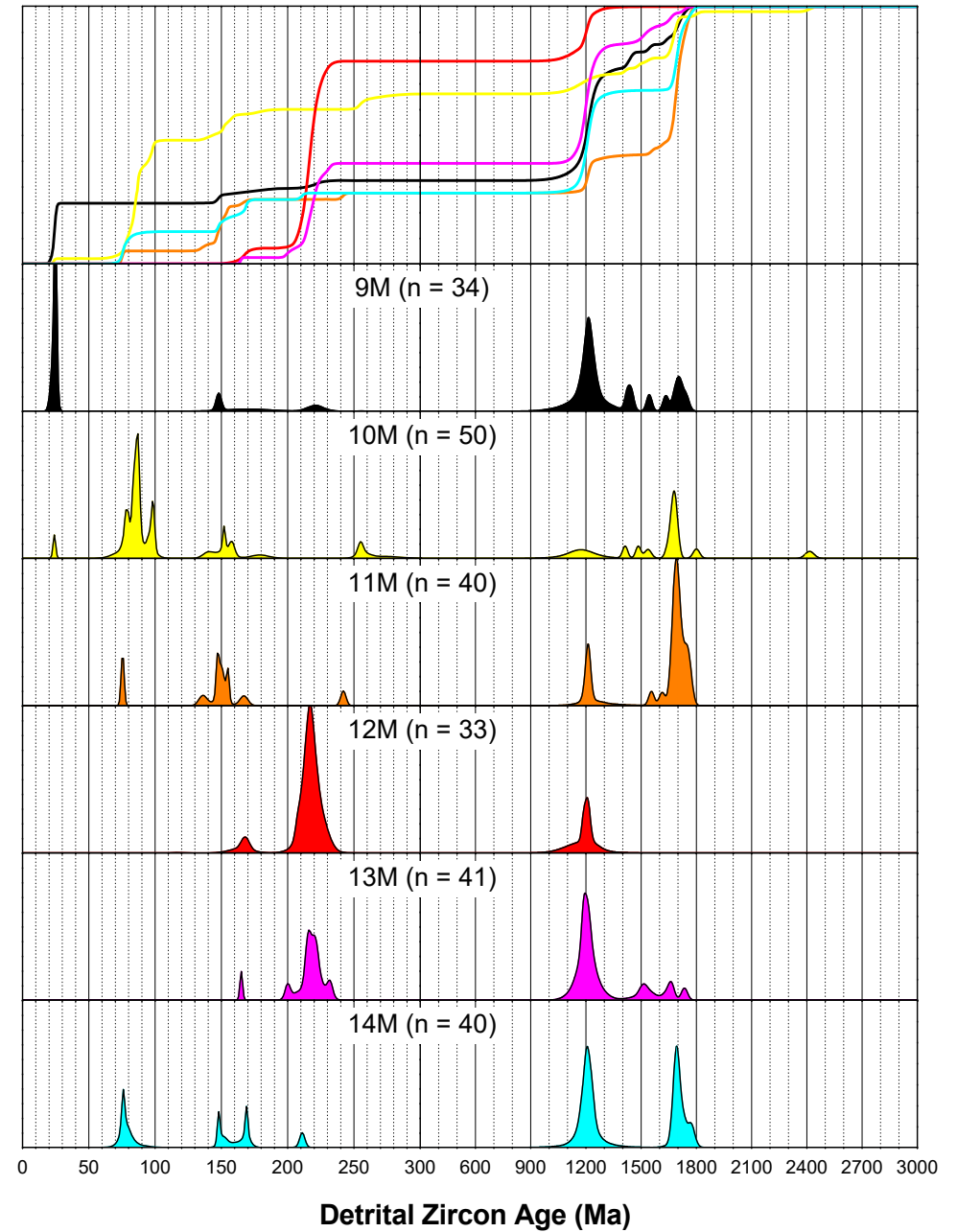
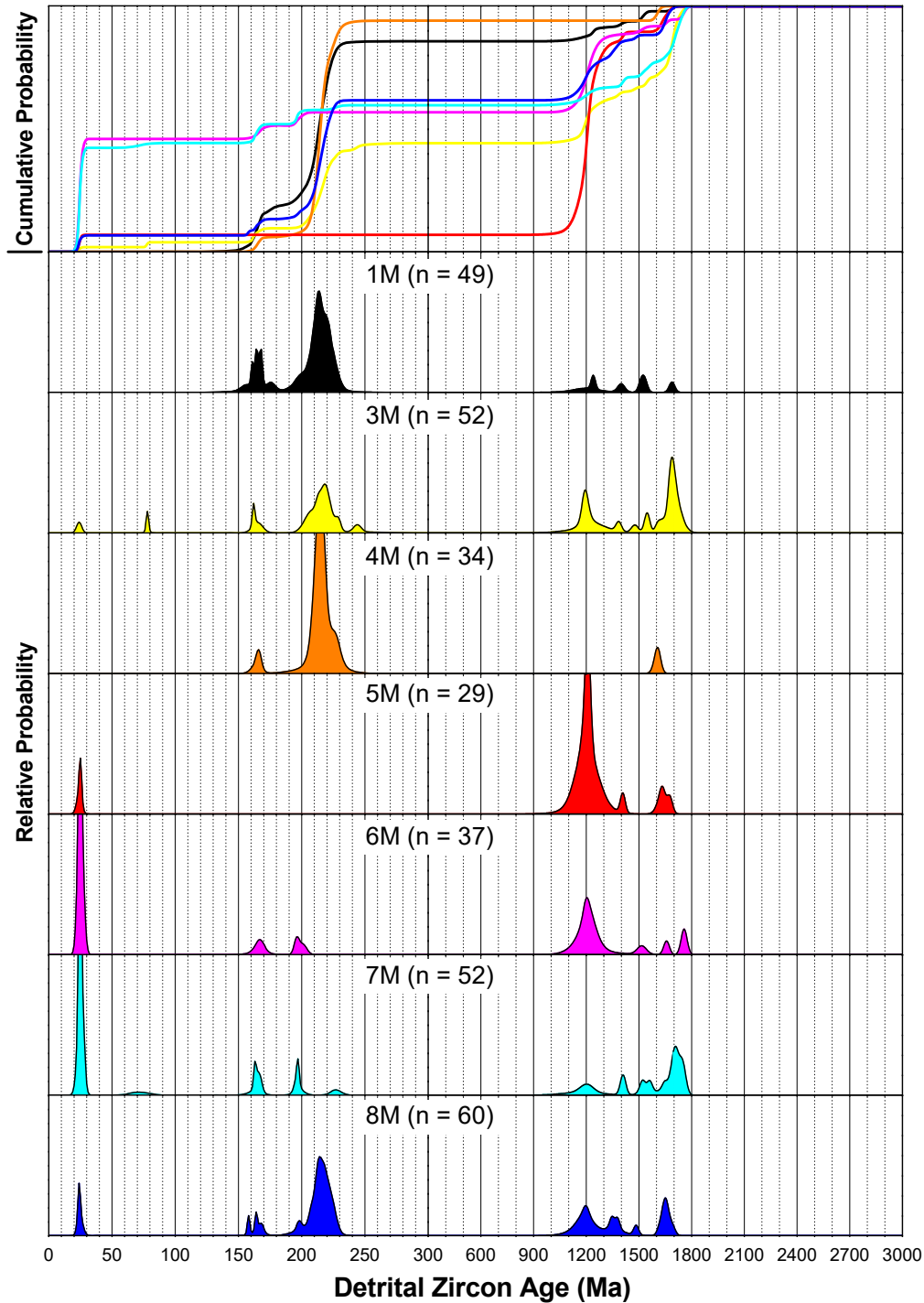
### **Supplemental Figures DR1 and DR2**

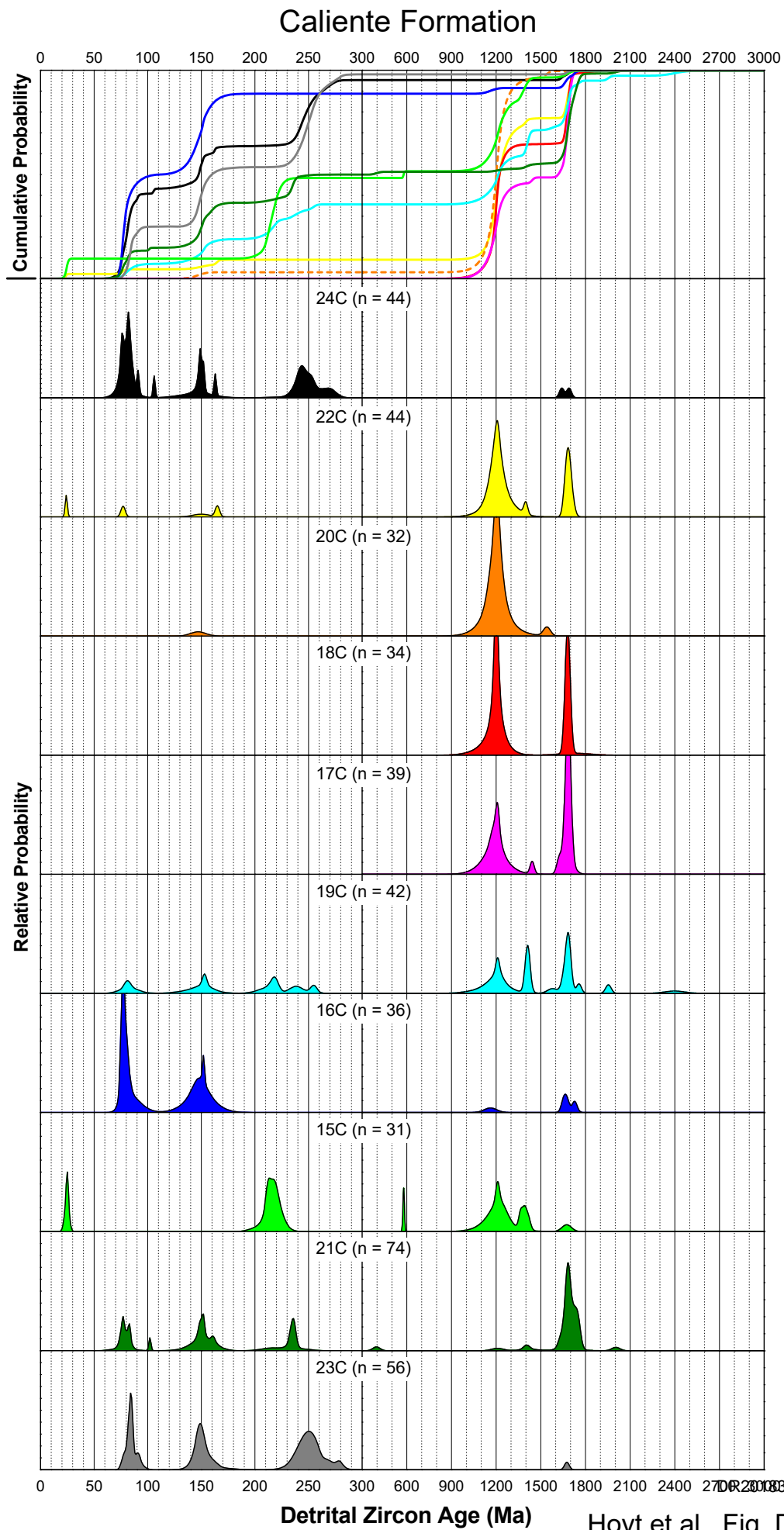
Accompanying Hoyt, J.F., Coffey, K.T., Ingersoll, R.V., and Jacobson, C.E., 2018, Paleogeographic and paleotectonic setting of the Middle Miocene Mint Canyon and Caliente Formations, southern California: An integrated provenance study, *in* Ingersoll, R.V., Lawton, T.F., and Graham, S.A., eds., *Tectonics, Sedimentary Basins, and Provenance: A Celebration of William R. Dickinson's Career*: Geological Society of America Special Paper 540, p. 463–480, [https://doi.org/10.1130/2018.2540\(21\)](https://doi.org/10.1130/2018.2540(21)).

2018362\_Table DR1.xls

Figure DR1. Cumulative and relative probability distributions of zircon U-Pb ages for individual samples of the Mint Canyon, Caliente and Punchbowl formations. Ages <1000 Ma are  $^{206}\text{Pb}/^{238}\text{U}$  ages. Those >1000 Ma are  $^{207}\text{Pb}/^{206}\text{Pb}$  ages. Line colors in the cumulative probability plot at the top of each page correspond to the fill colors in the underlying relative probability plots. Samples with orange fill in the relative probability plots are further distinguished by dashed line type in the cumulative probability plots. Note horizontal-axis scale break at 300 Ma. For the cumulative probability plots, the vertical scale ranges from 0 to 100% both to the left and right of the horizontal-axis scale break. For the relative probability plots, vertical scales differ to the left and right of the horizontal-axis break such that equal area represents equal probability throughout the graph. The number of analyses (n) for each sample is indicated in parentheses.

# Mint Canyon Formation





## Punchbowl Formation

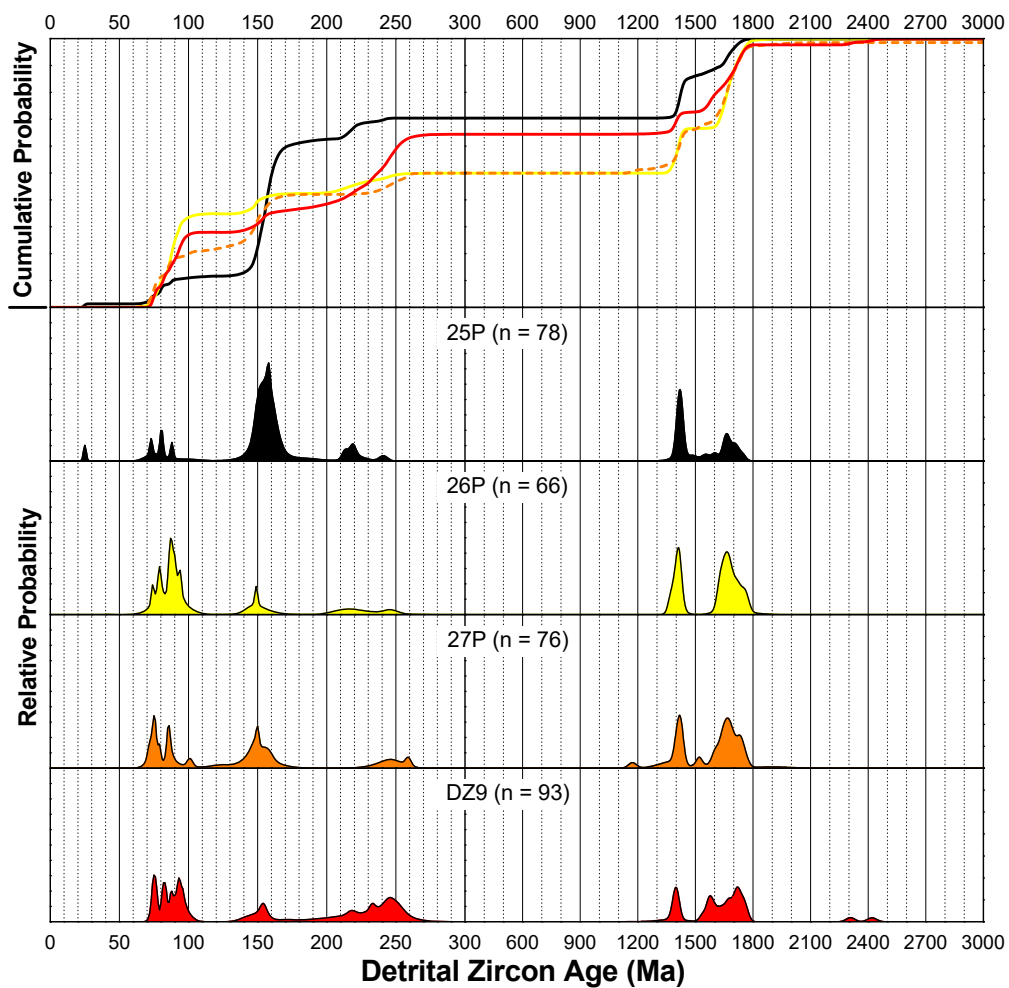


Figure DR2. Composite concordia plots for Mint Canyon (A, B), Caliente (C) and Punchbowl (D) formations. Colored lines show potential paths of lead loss (discordia lines) for zircon with starting ages of 1200, 1400 and 1700 Ma. Blue, red and magenta lines assume lead loss during the Jurassic; discordia lines for Triassic or Cretaceous lead loss would be similar, particularly toward their upper intercepts. Orange lines show the path of lead loss for 1700 Ma zircon disturbed at 1200 Ma. This path is applicable to gneisses in the contact aureole of the San Gabriel anorthosite suite (Barth et al., 2001). Zircon analyses consistent with such a history are moderately abundant in the Mint Canyon Formation (A). B shows an enlargement of part of the graph in A without the discordia lines. The latter figure clearly illustrates the largely concordant nature of ca. 1750–1650 Ma and ca. 1200 Ma zircon in the Mint Canyon Formation, but the high degree of discordance for analyses with  $^{207}\text{Pb}/^{235}\text{U}$  and  $^{206}\text{Pb}/^{238}\text{U}$  ages between 1650 and 1200 Ma. Most ages between 1650 Ma and 1200 Ma in the Punchbowl Formation appear to reflect zircon grains with ca. 1400 Ma igneous crystallization age, many exhibiting evidence for Mesozoic lead loss (D). The Caliente Formation may include both 1400 Ma igneous zircon and 1750–1650 zircon that was disturbed during intrusion of the anorthosite suite (C).

## References Cited

Barth, A.P., Wooden, J.L., Coleman, D.S., 2001, SHRIMP-RG U-Pb zircon geochronology of Mesoproterozoic metamorphism and plutonism in the southwesternmost United States: *Journal of Geology*, v. 109, p. 319-327, doi: 10.1086/319975.

