

# Correction

## EARTH, ATMOSPHERIC, AND PLANETARY SCIENCES

Correction for “Shear heating reconciles thermal models with the metamorphic rock record of subduction,” by Matthew J. Kohn, Adrian E. Castro, Buchanan C. Kerswell, César R. Ranero, and Frank S. Spear, which was first published October 29, 2018; 10.1073/pnas.1809962115 (*Proc. Natl. Acad. Sci. U.S.A.* **115**, 11706–11711).

The authors wish to note the following: “The heat flow calculations in Dataset S1 did not account properly for radioactive heating. This will raise our calculated heat flow (thick red curves in Fig. 1). Simultaneously, there was a drafting error that lowers these curves. The decrease is somewhat greater than the increase. These corrections imply slightly greater coefficients of friction than in the published version.

“Separately, in Dataset S1, calculations for slab-top temperatures are slightly incorrect above  $T_{\text{Crit}}$ . To simultaneously satisfy the two equations that describe slab-top temperature and thermal weakening above  $T_{\text{Crit}}$ , a moving boundary solution is required (to avoid a mathematical endpoint) that extrapolates  $\mu$  and temperature with depth. For each  $Z+\Delta Z$ ,

$T(Z)+\Delta T$  was originally calculated for a fixed value of  $\mu$  at depth  $Z$ . However,  $\mu$  changes between  $Z$  and  $Z+\Delta Z$ . The correction calculates  $\mu$  between  $Z$  and  $Z+\Delta Z$  by averaging  $\mu$  at  $Z$  [ $=\mu(Z)$ ], and the lower  $\mu$  at the temperature at  $Z+\Delta Z$  that would result from extrapolating temperature using  $\mu(Z)$  alone. This modification changes temperatures by several degrees, but does not substantively change our conclusions.

“The above changes affect Fig. 1; a corrected version appears below.

“Lastly, Dataset S2 was also mistakenly published as a duplicated version of Dataset S1.”

The corrected Fig. 1, along with the original Fig. 1 for comparison, appear below. The online version has been corrected. The legend for this figure remains unchanged. Additionally, the Supporting Information for this article has been updated to include corrected versions of Datasets S1 and S2. Correction Fig. C1 below illustrates the effects of the corrections involving the slab-top temperature calculations in Dataset S1.

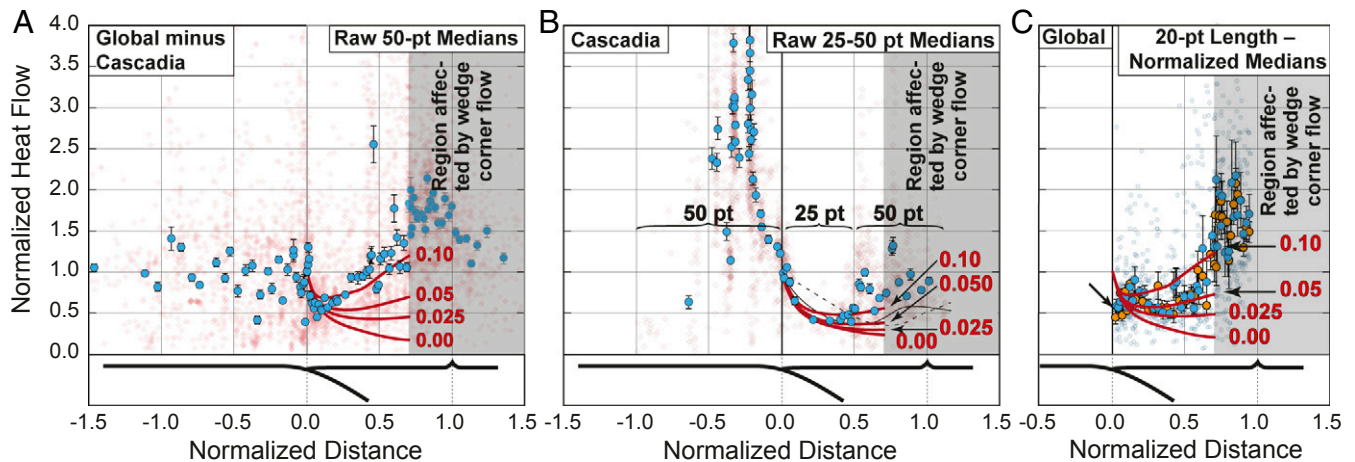


Fig. 1, Published. Fig. 1, published October 29, 2018.

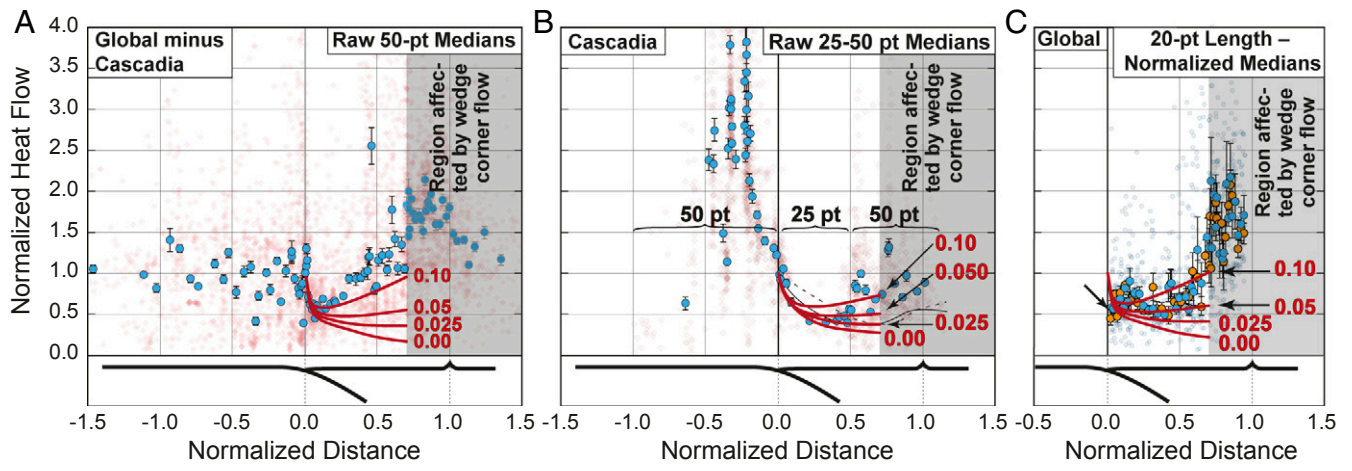
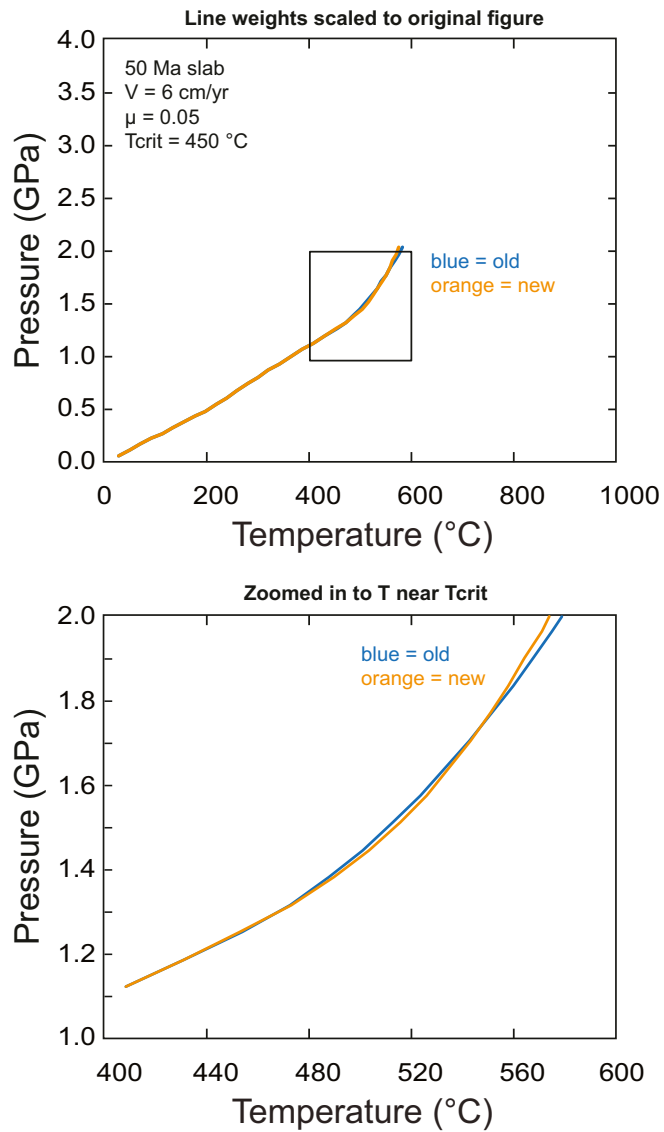


Fig. 1, Corrected. Fig. 1, corrected August 5, 2019.



CORRECTION

**Correction Fig. C1.** Pressure vs. temperature diagrams, showing slab-top geotherms corresponding to the original calculations (blue) and revised calculations (orange) for typical modeling parameters.

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