

Waldien, T.S., Roeske, S.M., Benowitz, J.A., Twelker, E., and Miller, M.S., 2020, Oligocene-Neogene lithospheric-scale reactivation of Mesozoic terrane accretionary structures in the Alaska Range suture zone, southern Alaska, USA: GSA Bulletin, <https://doi.org/10.1130/B35665.1>.

Supplemental Material

Supplemental File S1. Detailed mineral extraction, analytical, data reduction, and data filtering methods used in the LA-ICP-MS analysis.

Supplemental File S2. S2 U-Pb data.

Supplemental File S3. Detailed $^{40}\text{Ar}/^{39}\text{Ar}$ analytical methods and summarizes the $^{40}\text{Ar}/^{39}\text{Ar}$ results, wherein all ages are quoted at the 1 sigma level and calculated using the constants of (Renne et al. (2010)).

Supplemental File S4: X-ray maps of reaction textures in ultramafic cumulates.

Supplemental File S5: Geochronology plots illustrating the ca. 100 Ma magmatic and metamorphic event.

Supplemental File S6: Representative pictures of Cenozoic gravel deposits.

Supplemental File S7: Magnetic and resistivity maps of the study area.

Supplemental File S8. Electron microprobe data of the spinel group phases.