GSA Annual Meeting in Phoenix, Arizona, USA - 2019

Paper No. 216-4
Presentation Time: 2:30 PM

COAST-PARALLEL TRANSLATION OF THE YAKUTAT GROUP AND CHUGACH-PRINCE WILLIAM TERRANE, ALASKA (Invited Presentation)

GARVER, John I., Geology Department, Union College, 807 Union ST, Schenectady, NY 12308-2311 and DAVIDSON, Cameron, Department of Geology, Carleton College, 1 N College St., Northfield, MN 55057

Outboard accreted units that flank Wrangellia (aka the Baja BC block) in Alaska are dominated by Upper Cretaceous to Eocene turbidites of the Chugach-Prince William (CPW) terrane and the accreting Yakutat bl includes the Maastrichtian to Paleocene Yakutat Group. The stratigraphy and provenance of these clastic rocks is important in understanding their accretion and translation history. U/Pb analyses of detrital zirc nearly 100 sites allow a refined understanding of their stratigraphy and provenance. The Yakutat Group (YAK) consists of flysch and mélange: the flysch includes Maastrichtian to Paleocene turbidites and delta-fr sandstone, shale, and conglomerate; the sandstone-rich mélange is dominated by sandstone phacoids of the same age (and older phacoids and inclusions of sandstone, greenstone, marble, metaplutonic rocks, The maximum depositional age of the sandstones, distinctive U/Pb zircon grain-age distribution, and distinctive phacoids of the mélange allows correlation of the Yakutat Group to rocks of the Western Mélange and Nanaimo Group (NAN) in the Pacific NW. The original depositional setting of the Yakutat Group and at least some CPW rocks may have been at a latitude of southern California. The Yakutat Group, WMB, and provenance link to the Orocopia Schist and allied schists in the Mojave area. Thus initial deposition in the Maastrichtian-Paleocene may have been in proximity to the distinctive segment of the southern Californi built on SW Laurentian Proterozoic basement with a distinctive bimodal U/Pb zircon grain age distribution with peaks at ~1380 and ~1710 Ma. CPW rocks are less distinctive in terms of provenance, but publishe paleomagnetic studies require restoration far to the south of their current position, and we envision them in a position outboard of the Baja BC block. The YAK, WMB, and Nanaimo Group on the Insular terrane formed adjacent to the Mojave tectonic block and were then translated to the Pacific NW together at the southern end of the Baja BC block in the Paleocene and prior to the collision of Siletzia. YAK rocks were th and translated northward to Alaska after initial collision of older units of Siletzia in the Early Eocene.

Session No. 216
T58. Late Cretaceous to Early Paleogene Tectonic Development of the North American Cordillera II
Tuesday, 24 September 2019: 1:30 PM-5:30 PM

Room 231ABC, North Building (Phoenix Convention Center)
Geological Society of America *Abstracts with Programs*. Vol. 51, No. 5
doi: 10.1130/abs/2019AM-340169

Back to: T58. Late Cretaceous to Early Paleogene Tectonic Development of the North American Cordillera II

<< Previous Abstract | Next Abstract >>