

C12B-06 Paleo-Ice Sheet/Stream Flow Directions of the Northern Antarctic Peninsula Ice Sheet Based Upon New Synthesis of Multibeam Seabed Imagery

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Moscone West
3005

We provide a new map of swath bathymetry for the northern Antarctic Peninsula, including data sets from five national programs. Our map allows for the compilation and examination of Late Glacial Maximum (LGM) paleo-ice sheet/stream flow directions developed upon the seafloor from the preservation of: mega-scale glacial lineations, drumlinized features, and selective linear erosion. We combine this with terrestrial observations of flow direction to place constraints on ice divides and accumulation centers (ice domes). The results show a flow divergence in Larsen B embayment, between flow emanating off the Seal Nunataks (including Robertson Island) that directed ice in a southeast direction, then easterly as the flow transits toward the Robertson Trough. A second, stronger "streaming flow" directed ice southeasterly then southward, as ice overflowed the Jason Peninsula to reach the Jason Trough, the southern perimeter of the embayment. This reconstruction is far more detailed than other recent compilations because we followed specific flow indicators and have kept tributary flow paths parallel. Our reconstitution also refines the extent of at least five other distinct paleo-ice stream systems which in turn serve to delineate seven broad regions where ice domes must have been centered across the continental shelf during the LGM.

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