

**EXTENT AND TIMING OF ICE SHEET RETREAT DURING THE LAST GLACIAL MAXIMUM AT LAMBERT GLACIER AND FRAMNES MOUNTAINS.**

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We present an overview of our program of <sup>26</sup>Al and <sup>10</sup>Be exposure age dating at Framnes Mountains in Mac.Roberston Land and at Lambert Glacier-Amery Ice Shelf drainage system (LG-AIS). These two areas are representative of two contrasting ice flow regimes that drain ice from the EAIS: the slow, diffusive ice flow in the Framnes and the inland, convergent, streaming flow that occurs in the LG-AIS. Exposure dating of 21 glacial erratic boulders from the chain of nunataks forming the Framnes Mountains does not support the hypothesis that the EAIS was the source of Meltwater Pulse 1A., a rise in eustatic sea level of 20 m that occurred in less than 500 years at around 14,600 years BP. Exposure ages indicate that the Ice Sheet remained at its maximum extent until ~12 ka, when geomorphic evidence indicates that 350 m of ice sheet thickening occurred near the present-day coastline, declining to less than 100 m at 50 km inland. The ice sheet reached its present elevation by ~ 5 ka at a time when eustatic sea level stabilised. Hence our data indicate that deglaciation of Mac.Robertson Land occurred during the Holocene, and took thousands of years to complete.

The pattern of deglaciation following the LGM in and around the LG-AIS was complex. Ice retreat in the coastal reaches of the LG-AIS occurred at ~16-15 ka, followed by the eastern part of Prydz Bay including Vestfold Hills at ~12 ka BP. The southern Prince Charles Mountains began a period of slow downwasting around the same time as the coastal reaches of the LG-AIS, but most of the ice retreat occurred between 10-8 ka. These patterns suggests that while deglaciation of the coastal regions of both styles of ice flow were controlled by both sea level rise and subglacial topography, snow accumulation and ice dynamics may be more important in the inland reaches of large ice drainage systems.