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Cosmogenic beryllium-10 from a low-altitude coastal Antarctic ice core

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Levels of cosmogenic beryllium-10 (10Be) preserved in ice cores are dependent on the magnitude of variations in solar activity in the past. However, the interpretation of ice core 10Be records in terms of solar activity is complicated by poorly-understood issues of in-situ production at high-altitude sites, and the influence of transport/deposition on the 10Be record preserved at a particular location. Improved understanding of these issues requires 10Be histories from a range of sites with differing latitude, altitude and meteorology. Here we introduce new measurements of 10Be in 240 samples taken from an ice core retrieved from Berkner Island (79S°45°E; 880m altitude). These samples span two periods in the Holocene (1000-2500 and 5300-8000 BP, with a sample resolution of $\sim$20 years). We compare the 10Be data with the INTCAL-14C profile with the aim of providing a robust dating of the Holocene section of this core, and then compare the 10Be data from this low-altitude coastal site with similar datasets from high-altitude cores from central Antarctica and Greenland.