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## Antarctic Peninsula ice core captures Larsen ice shelf surface melt

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The collapse of the Larsen A and B ice shelves, in 1995 and 2002 AD respectively, has resulted in accelerated mass loss and an increased Antarctic Peninsula contribution to global mean sea-level rise. Understanding the drivers of Antarctic ice shelf collapse is critical in quantifying future predictions of Antarctic mass balance and sea-level rise. We demonstrate that proxies from Palmer Antarctic Peninsula ice core capture Larsen Ice Shelf surface melt. Utilizing proxies, we identify past periods that are likely to have been associated with more extreme and increased frequency of Larsen melt events. Our results suggest that ice shelf melt has occurred in the past, however, considering that that  $\delta^{18}\text{O}$  has been higher since the 1970s than any time throughout the core, our findings suggest that the warming and melt events have become greater in the recent past compared to the past 391 years.

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