

Carbonate mineral particles observed in a layer of an ice core drilled from Grigoriev ice cap in Kyrgyz Tianshan, Central Asia

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In 2007, an 87 m-deep ice core were successfully drilled on Grigoriev Ice Cap (4600 m a.s.l.) located in the Tien Shan Mountains, Kyrgyzstan. We report a layer rich in carbonate mineral particles found at 53.5 m deep in the ice core. Although a number of dust layers consisting of silicate mineral particles were contained in the ice core, the layer contained less silicate, but abundant carbonate mineral particles. Significant negative stable isotope values and higher concentrations of major chemical solutes were also observed at the layers. Pollen based dating of the ice core showed that the layer corresponded to 1833 A.D. Results suggest that the layer was derived from a huge storm. Although the origin of the carbonate minerals is still mystery, it is probably far distant arid area.

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