

## **The Number and Magnitude of Large Explosive Volcanic Eruptions in the last 1000 years: Quantitative Evidence from two new South Pole ice cores**

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An ice core drilling project during the 2000/2001 austral summer at Amundsen-Scott South Pole Station produced two core of about 125m each. Ion analysis provided a sulfate based volcanic record for the last 1000 years. A normalized flux technique (flux ratio of an event vs. a well-know eruption) is used to estimate the magnitudes of the 1600 A.D. Huaynaputina eruption, the 1454 A.D. Kuwae eruption and the three 13th century unknown eruptions. Using the 2 parallel cores allows for the reduction in resulting flux uncertainties. This method is also used to clarify the number of large or moderately large eruptions in the 13th century. The new record is compared to existing South Pole and other Antarctic records to resolve several conflicts. This work is a first step in developing an integrated, high quality volcanic record, which can in turn be a basis of a quantitative study of the atmospheric impact of explosive volcanism.