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## The 4.2 ka cal BP major eruption of Cerro Blanco, Central Andes

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The major eruption of the Cerro Blanco Volcanic Complex (CBVC), in the Central Volcanic Zone of the Andes, NW Argentina, dated at 4410–4150 a cal BP, was investigated confirming that is the most important of the three major Holocene felsic eruptive events identified in the southern Puna (Fernandez-Turiel et al., 2019). Identification of pre-, syn-, and post-caldera products of CBVC allowed us to estimate the distribution of the Plinian fallout during the paroxysmal syn-caldera phase of the eruption. Results provide evidence for a major rhyolitic explosive eruption that spread volcanic deposits over an area of about 500,000 km<sup>2</sup>, accumulating >100 km<sup>3</sup> of tephra (bulk volume). This last value exceeds the lower threshold of Volcanic Explosive Index (VEI) of 7. Ash-fall deposits mantled the region at distances >400 km from source and thick pyroclastic-flow deposits filled neighbouring valleys up to several tens of kilometres from the vent. This eruption is the largest documented during the past five millennia in the Central Volcanic Zone of the Andes, and is probably one of the largest Holocene explosive eruptions in the world.

The implications of the findings of the present work reach far beyond having some chronostratigraphic markers. Further interdisciplinary research should be performed in order to draw general conclusions on these impacts in local environments and the disruptive consequences for local communities. This is invaluable not just for understanding how the system may have been affected over time, but also for evaluating volcanic hazards and risk mitigation measures related to potential future large explosive eruptions.

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