

## The Ohachidaira caldera-forming eruption and associated deposits, Taisetsu volcano group, Japan

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The Sounkyo member was produced during the Ohachidaira caldera-forming eruption that occurred in the central part of Taisetsu volcano group, central Hokkaido, Japan. At distal sites, the member comprises a pumice-fall deposit and the overlying Sounkyo ignimbrite (about 6.5 km<sup>3</sup>), previously named Px-type pyroclastic-flow deposit by Sato and Wada (2012). Proximal deposits, occurred around the Ohachidaira caldera, comprise the following pyroclastic sequence from base to top: pumice and scoria-fall deposit (SK-A); ignimbrite (SK-B); lithic breccia (SK-C); scoria-fall deposit (SK-D); and pyroclastic-surge deposit (SK-E). SK-A mantles the land surface, attains a maximum thickness of 60 m in the caldera rim exposures, and shows an outward decrease in thickness, grain-size, and the degree of welding. SK-B is a valley-filling ignimbrite as much as 45 m thick composed mainly of pumice and scoria clasts up to 70 cm in diameter and gray ash matrix with a small amount of lithic fragments, and varies vertically from massive facies (up to 15 m thick) to crudely parallel-stratified facies. SK-C (up to 27 m thick) is massive and poorly sorted, consisting predominantly of coarse lithic blocks, up to 2.6 m in diameter, and subordinately of pumice lapilli, with fines-depleted coarse ash matrix, and varies from clast-supported to matrix-supported. SK-C thickens into topographic depressions, contains abundant rounded pumice clasts, lacks impact structures even beneath meter-sized lithic blocks, and grades downward into SK-B ignimbrite and laterally into a fine-bearing, matrix-supported, lithic breccia, indicating a flow origin. SK-D is locally exposed and has an average thickness of 1 m. SK-E (up to 15 m thick) is a cross-stratified pyroclastic-surge deposit. The grain-size and component characteristics of SK-E are similar to those of SK-B. Field evidence shows that the distal pumice-fall deposit represents a lateral counterpart of SK-A. Hence the Sounkyo ignimbrite might be a distal equivalent of SK-B. The coarse lithic breccia (SK-C) overlies the voluminous ignimbrite (SK-B), implying that a vent widening occurred at the end of the climactic eruption.

Keywords: Ohachidaira caldera, Taisetsu volcano group, caldera-forming eruption, ignimbrite, lithic breccia