

# **Late Holocene magmatic dynamics of the Changbaishan volcanic field, China/North Korea**

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The Changbaishan volcanic field is one of the most dangerous active volcanic fields in Northeast Asia. Its Millennium eruption at 946-947 CE is considered to be one of the world's largest explosive eruptions over the past 2000 years. However, little attention has been paid to the other Late Holocene eruptions of this volcanic field. The petrographic and geochemical data (the EPMA and LA-ICP-MS analyses of tephra) of a newly discovered Late Holocene eruptive sequence of the Changbaishan volcanic field were analyzed. Results suggest that four tephra layers indicate this eruptive sequence. Tephra layer 1 was the weathering product of Early Pleistocene shield construction trachyandesite of the Changbaishan volcanic field. Tephra layer 2 was the product of a comendite magma chamber that erupted at 3356 cal. yr BP, which erupted from the secondary caldera. Tephra layers 3 and 4 were the products of the better known Millennium eruption of Changbaishan Tianchi volcano. Tephra layer 3 was also sourced from the comendite magma chamber, which was the first sub-stage of the Millennium eruption. Tephra layer 4 was sourced from the trachyte magma chamber, which was the second sub-stage of the Millennium eruption. This newly discovered eruptive sequence could act as a key isochronous marker horizon for the chronological framework in a range of sedimentary contexts across Northeast Asia, and provide important historic eruptive information of the Changbaishan volcanic field.