Paleomagnetic secular variation of 3–4 ka from lava flows around the post-caldera cones of Aso Volcano and its contribution to the volcanic stratigraphy

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We have conducted a paleomagnetic study on Holocene lava flows around the post-caldera cones of Aso Volcano, central Kyusyu, Japan. On the basis of the paleomagnetic directions, combined with geological evidences, we have refined the stratigraphic relationship of the lava flows and the distribution of them. In the previous studies, lava flows distributed around a cone (volcanic center) were described as a single geological unit corresponding to each cone. Paleomagnetic directions obtained in this study are useful to recognize temporal correlation or distinction between the studied sites. It is also noted that the paleomagnetic directions obtained from 22 sites around three cones and a scoria cone are distributed on a simple curve, which is considered to record paleomagnetic secular variation (PSV) during the period between 4 and 3 ka. This PSV curve contributes to an improved volcanic stratigraphy including temporal gaps of the order of 10–100 years.

Keywords: paleomagnetic secular variation, volcanic stratigraphy, Aso Volcano

