Ground based infrared thermal observations at Sakurajima volcano

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Ground based thermal observations for the flank of Sakurajima volcano were repeatedly conducted since 1970s. From these observations, four thermal anomaly areas were found on the eastern to southern flank of Minamidake. Heat discharge rate from each anomaly in 1970-1980s was estimated to 3-16 MW which was one digit smaller than that from a summit crater of Minamidake. Since May 2006, we have restarted the observation with an infrared thermal camera after 13 years' interval. Rate of observations have been about once a month in average. After August 2007, continuous unmanned observation was started focusing on a thermal anomaly area of the southeastern flank, an area around Showa crater. From results of our two years' observation, surface temperature and heat discharge rate in a few thermal anomaly areas at the southeastern flank have increased comparing with a result of the last observation in 1993. On the other hand, no significant changes were recognized for those of the anomaly area on the southern flank. Especially to the case of an anomaly area around Showa crater, cyclic changes of thermal activities were recognized in these two years: the activity increased before the eruption of Showa crater, sudden decreased during the eruption, and then re-increase after the eruption towards the next eruption. However, result of continuous measurement suggested that these cycles seemed to be resulted of effects of the air temperatures (seasonal changes). More appropriate method to correct the observed data would be needed to evaluate the observed thermal data.