

Geology of Kita-Iojima Volcano, Ogasawara Islands, Japan

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We surveyed Quaternary Kita-Iojima Volcano of Ogasawara Islands in July 2005. It is an uninhabited island, approximately 2 by 3 kilometers in size, and 792 meters high above sea level. The volcanic body comprises well-stratified volcanoclastic rocks and thin lavas. Many radial dikes intrude them. Strikes of dikes and dips of strata suggest that the volcano was formed mainly by central eruptions. Some dikes show the evidence of feeder dykes or fissure eruptions.

Major chemical compositions were analyzed for 8 lavas and 12 dike samples by XRF. Most of them are low-K to medium-K basalt with 47.2-51.3 % SiO₂ and 0.17-0.57 % K₂O contents. Most of them have abundant plagioclase and some olivine phenocrysts with or without clinopyroxene phenocrysts. A basalt lava with a low phenocryst content was found. A nearly-aphyric andesite dike was found at the western coast. It has 59.4 % SiO₂ and 1.14 % K₂O contents. The andesite has similar compositions with those of Nishinoshima Volcano. The basaltic rocks contain higher SiO₂ and lower Na₂O, K₂O and P₂O₅ contents compared with those of Minami-Iojima Volcano.