

Brief overview of landing survey and seismic observation at Nishinoshima

*Minoru Takeo¹, Takao Ohminato¹, Mie Ichihara¹, Fukashi Maeno¹, Takayuki Kaneko¹, Masanao Shinohara¹, Kiyoshi Baba¹, Kiwamu Nishida¹, ATSUSHI YASUDA¹, Atsushi Watanabe¹, Hiroko Sugioka⁸, Yozo Hamano², Noriko Tada², Shun Nakano³, Mitsuhiro Yoshimoto⁴, Kazuto Kawakami⁵, Tomoki Chida⁶, Akimichi Takagi⁷, Yutaka Nagaoka⁷

1. Earthquake Research Institute, University of Tokyo, 2. JAMSTEC, 3. Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology, 4. Mount Fuji Research Institute, Yamanashi Prefectural Government, 5. Forestry and Forest Products Research Institute, 6. Ministry of the Environment, Kanto Regional Environment Office, 7. Meteorological Research Institute, 8. Kobe University

A new volcanic islet had been growing up with lava effusion and Strombolian activities at Nishinoshima, Izu-Bonin arc from November 2013 to November 2015. The morphological evolution of Nishinoshima had been revealed based on airborne observations and satellite images. The eruption activity has been monitored continuously using ocean bottom seismograph observation; the number of eruptions had registered a decline gradually, the eruption having stopped by the end of November 2015. After the volcanic activity falling to a low level, we had promoted a research survey of volcanology and bionomy at Nishinoshima from October 16th to 25th, 2016, using an academic investigation ship "Shinsei-maru" managed by AORI, University of Tokyo. The investigation items of the landing team were geological survey, installation of seismic station, and survey on nidification of seabirds. OBSs and OBEMs had been installed around Nishinoshima, pre-installed OBSs having recovered. A monitoring system of remote volcanic island using WaveGlider was operated around Nishinoshima on a trial basis. An analysis of whole rock chemical composition of volcanic products in 2013-2015 eruption reveals that all samples are composed of andesite with SiO₂ content of 59.5-59.9wt%, falling on middle content between the eruption products in 1973-1974 eruption and the lava of the old islet. The telemetric seismic monitoring system in Nishinoshima is on course to operate; the seismic data occasionally include long-lasting high-frequency tremors which seem to be related with some sort of Nishinoshima activity. We will make clear the growing process of volcanic islet together with geological and geophysical knowledges based on further analyses of volcanic products and those of OBS and OBEM data which will be recovered on June 2017.

Keywords: Nishinoshima, volcanic islet, eruption