

Reports on Volcanic Activities and Volcanological Studies in Japan

for the Period from 1999 to 2003

I. Preface

The most significant events for volcanologists in Japan during this period are the Usu 2000 eruption and the Miyakejima 2000 eruption. The two eruptions have provided a test for volcanologists who faced the challenge of obtaining, conveying, and explaining the information needed by the Government and local officials charged for public safety. Also the two eruptions have provided volcanologists opportunities to learn more about the dynamics of volcanoes, and the studies of these eruptions will improve our knowledge and understanding of the eruptive mechanism.

The onset of the eruption was successfully predicted based on the detection of seismic activity and ground deformation, and more than 9000 people living near Usu volcano evacuated before the eruption. Phreatomagmatic eruption occurred on March 31; however, no casualties were reported because of the successful pre-eruption evacuation. Phreatic eruptions continued for several months and cinder cone was formed yielding intense ground deformation.

In the early stage of the Miyakejima eruption, migration of magma was completely detected by seismic monitoring and tiltmeter measurement. Based on this observation, eruption within a short time was expected and was declared to the public. After the initial rather minor eruption, caldera formation was witnessed in July with complete description of the progress of the subsidence of the summit within the newly formed caldera. After several explosive events during August, all the residents evacuated from the island. Emission of huge amount of sulfur dioxide gas has continued for more than two years, and all the evacuated residents are still staying outside of the island. Brief description of both eruptions will be given in the following sections together with the results of investigation.

The sixth 5-years plan of the National Project for the Prediction of Volcanic Eruptions was proposed by the Geodetic Council of Ministry of Education, Science and Culture in 1998, and was started in 1999. The present plan will be completed at the end of this fiscal year, and another 5-years plan will be proposed to the Government within a few months.

In the latter parts of this report, the scientific activities related to volcanology in Japan are briefly reviewed for the period from 1999 to 2003, and the publication list of the related studies are included.

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