

## **The 1989 submarine eruption off eastern Izu Peninsula, Japan (review)**

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The explosive submarine eruption was observed on July 13, 1989, 3 km off east coast the Izu Peninsula. It was the birth of the new submarine volcano which was named "Teishi Knoll" later. These eruption activities and the processes of its formation were observed in detail. We will remark the phenomena above sea surface and the deformation of seafloor, as these events is hardly observed all over the ocean. The eastern part of the Izu Peninsula and the adjacent coastal area are called "Izu-Tobu Volcano Group" extending across 30 km x 40 km. There are 75 monogenetic volcanoes on the land and about 35 submarine volcanoes on seafloor. Teishi Knoll is located at the northern edge of this volcano group. The earthquake swarms have occurred 26 times from 1975 to 2000 in this area. It is suggested that these occurrences be caused by magmatic intrusions. The Teishi Knoll erupted following the earthquake swarms from June 30 and the volcanic tremor from July 11 in 1989. This explosive submarine eruption was observed by the officers and crews of the survey vessel "Takuyo." The water domes and jets were taken pictures and made video tape. The shock waves were recorded on magnetic tape. The shock waves started at 18:33. 5 water domes and jets appeared between 18:35 and 18:44. The largest water jet, which rose at 18:41, is 113m in height above sea surface and 230m in diameter. Japan Coast Guard surveyed this region three times on July 9, 13, 15. We observed the process of berth of the submarine volcano. The cryptodome (25 m height, 500 m across) was discovered on July 13 on the seafloor where was a smooth slope on July 9. The crater (40 m depth, 200 m diameter) was detected at top of the cryptodome on July 15.