# 2002 eruption of Pago volcano, Papua New Guinea

# Mitsuhiro Yoshimoto[1], Setsuya Nakada[1], Kohichi Uhira[2], Akimichi Takagi[3], Ima Itikarai[4]

[1] ERI, Univ. Tokyo, [2] JMA, [3] MRI, [4] RVO, PNG

A new eruption began at Pago Volcano on August 5, 2002, following about one-month seismic activity. According to the eyewitness accounts of local people, about ten times of puffing of volcanic ash took place till August 14. Five craters are aligned in the NW-SE direction from the middle slope NW the Pago Central Cone to the Witori caldera. New lava descended from four craters except from the highest one. The largest amount of lava did from the lowest one, changing its flowing direction into NE and SW due to the caldera wall.

The 2002 ash fall deposits were distributed in northeast to north of Pago. The weight of ash fall deposits is 291g/m2 at a place of 10.5 km north of the caters (Rikau village), 195 g/m2 at 18km northwest (Porapora). The volume of ash is roughly estimated more than one hundred thousand tons from similar sale eruption in Japan (e.g., Hokkaido-komagatake 1996 eruption). These ash fall deposits consist of more than 50 vol % fine particle. The ash deposits consist of old lava fragments, mineral fragments (plagioclase, augite, hypersthene), cristobalite, and clear glass shards. Results of XRD analysis indicate also plagioclase and cristobalite. However, there are small amount of cristobalite in the ash, based on microscopic observation.

The 2002 lava flow covered 2 square kilometers and is estimated 0.04 cubic kilometers as of August 30, 2002. It is less than total area and volume of previous 1911-18 eruption (8km2, 0.8km3). This lava of Pago is dacite of SiO2=66.8wt% containing phenocryst of plagioclase, augite, hypersthene, and magnetite. Cristobalite was relay observed in the groundmass. Whole rock chemical composition of 2002 lava flow and 2002 ash fall deposit is quite similar to the previous lava flow. The pre-eruptive temperature of the Pago dacite lava is estimated to be 1000 degree from pyroxene geothermometer of Lindsley (1983). This temperature is higher than typical dacite lava.