

## 阿蘇火山中岳 1988~1995年活動期における噴火様式の変化

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The Sequence and Style of the 1988-1995 Eruptions of  
Nakadake Aso Volcano, Kyushu, Japan

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The latest eruptive activity of Nakadake, Aso Volcano, occurred in the period 1988-1995. We observed the surface activity and the ash-fall deposits to determine the sequence and style of eruption during this period. The 1988-1995 Nakadake activity is divided into four stages: the early stage, the climactic stage, the post-climactic stage, and the final stage. The final stage means afterheat activity. In the early stage (March 1988-October 1989), the crater bottom, which had been occupied by water, gradually dried up. Thereafter, it emitted black ash from dried-up vents. The glass included in the ash fall deposits was composed mainly of blocky particles. In the climactic stage (October-November 1989), the activity alternated between strombolian and phreatomagmatic eruptions. During this stage, there was a rapid increase of brown and clear scoria glasses in the deposits, together with increased activity of isolated volcanic tremors. From the post-climactic stage (December 1989-February 1991) to the final stage (March 1991-October 1995), surface unrest at the crater continued due to a remarkable change in water level of the crater lake. Ash, strombolian and phreatomagmatic eruptions were observed. In the post-climactic stage, opaque blocky grains were predominant in the ash fall deposits. The largest explosive eruption of the 1988-1995 activity occurred at the crater lake on 20 April 1990, generating scoria deposits. Distinct fractures were identified on the surface of ash particles in the 20 April 1990 deposit, which strongly suggests that the ash grains were chilled rapidly by magma-water interaction (phreatomagmatic eruption). In the final stage, most of the blocky glass particles were surrounded by a brown skin, possibly a hydration skin. Thus, the surface activity and characteristics of the ash fall deposits probably varied between stages during the activity of 1988-1995. We believe that the presence of a large amount of water in and around the crater played an important role on the eruptive activity at the Nakadake crater. For hazard mitigation purposes, it is important to remember that phreatomagmatic eruptions can suddenly occur, not only in the climactic stage, but also in the post-climactic and final stages of an eruption.

**Key words:** 1988-1995 activity, phreatomagmatic explosion, ash grain morphology, Nakadake, Aso Volcano

## 1. はじめに

阿蘇火山中岳の第1火口では、1988年から1995年にかけて一連の火山活動があり、その後、明らかに本質物質を噴出するような顕著な活動はみられていない。中岳の活動は、1989~1991年がとくに活発であったために、

この時期が一つの活動期のようにもみえるが、本論ではその前後の期間も含め、1988~1995年を1サイクルの活動期として捉え、この時期を「1988~1995年活動期」として取り扱う。

近年の中岳の活動周期は、数年~十数年程度であり、

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