

## New unspiked K-Ar ages of shield and postshield lavas from the West Maui volcano, Hawaii

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Hawaiian volcanoes have four growth stages: preshield, shield, postshield and rejuvenated stages. The quiescence of volcanism between postshield and rejuvenated stages is considered to be about 0.5 to 1 million years.

In this study, we measured K-Ar ages on nine Honolua postshield-stage lava samples and thirty Wailuku shield-stage lava samples from the West Maui volcano, island of Maui, Hawaii, in order to understand better the rate of shield building and timing of postshield growth at the hot spot volcanoes. Magnetic polarities of these samples have also been measured to correlate these ages with geomagnetic polarity time scale.

We measured these ages using unspiked peak comparison K-Ar dating method on fresh groundmass samples. In order to get rid of the cause of excess Ar effect, we removed phenocrysts in samples using magnetic separator.

As the result, history of West Maui volcano was revealed as follows.

1. The major volcanic activity of the West Maui took place at ~1.8-1.5 Ma for shield stage Wailuku unit and ~1.4-1.3 Ma for postshield stage Honolua unit. There is no evidence of quiescence longer than 0.1 m.y. between postshield and shield stages.

2. The period of quiescence between postshield and rejuvenated stages was estimated previously to be about 0.6 m.y. in West Maui (Tagami et al.,2002).

But in this study we find that the youngest age of postshield stage rocks is  $1.04 \pm 0.04$  Ma. Along with the age of rejuvenated stages Lahaina volcanics (Tagami et al.,2002), this suggests that the quiescence was shorter as ~0.4 m.y.