

## Differentiation of the petit spot magmas due to the plate flexure

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An old lithosphere is deformed or flexed due to seamount-loading, and due to bending related to the plate subduction. Large curvatures of the lithosphere might cause brittle fractures at the upper lithosphere. Hirano et al. (2006) proposed the young volcanoes on the NW Pacific Plate before its subduction, named petit spot. They explained that incipient melts in the asthenosphere can be squeezed out by tectonic forces associated with plate flexure without the magma fed by mantle plume.

The lavas were newly dated and analyzed in this study. Accordingly, the petit spot is characterized by more than six million years of activity over a large eruption area of the concave part of the plate but with low volumes of magma production and the differentiated composition of approximately 50 wt% SiO<sub>2</sub> and 60 of Mg number. The petrography of xenoliths, on the other hand, shows the magma ascending rapidly through the upper lithosphere. These data implies the magma differentiated at the depth deeper than upper lithosphere.