Alkali-basaltic rocks from Shikoku Basin and Miura-Boso Peninsulas: Petit-spot origin?

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Similar type of basaltic rocks to the so-called petit-spot type basaltic rocks from the NW Pacific have been found from both on land and under the sea in the Shikoku Basin and Miura-Boso Peninsulas, respectively. These rocks are noticed to be out of the domains of the discrimination diagrams of Pearce and Cann (due to too much Zr contents). First they are recognized of a peculiar type from the Shikoku Basin as off-ridge volcanism by Kazuo Kobayashi (DSDP Leg 58). Leg 58 cored alkali-basalts above the abyssal basalt in the Shikoku Basin (Holes 444A and 446A) as sills in the sediments. They are of 14.7 +/- 2.1 Ma K-Ar age at Site 444A, and rich in TiO2 and Zr.

Similar alkali-basaltic rocks (pillow lavas, dolerite dykes etc.) are known from Miura and Boso Peninsulas as small blocks of high TiO2 contents and strong left upslope in spider diagrams of REE and trace elements (Taniguchi and Ogawa, 1990; J. Geol. Soc. Japan). Ages of those from the Miura are around 37 and from Boso 20 Ma K-Ar or Ar-Ar ages, respectively (Taniguchi and Ogawa, 1990; Hirano and Okuzawa, 2002; J. Geol. Soc. Japan). The modes of occurrence are known to be within or in fault contact with the Miocence accretionary prisms, many are small blocks of m to 10 of m in scale, relatively fresh, younger than the surrounding abyssal tholeiite, etc. They could form a seamount or mound on an oceanic plate, and then were accreted to Miura-Boso Peninsulas. Similar alkali-basaltic rocks have also known from Shikoku and Kyushu, from the Mesozoic accretionary prisms. They might be the candidates of the past-age petit-spot type rocks. We need further study in detail.