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# Press Releases

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JAMSTEC



## **International Ocean Discovery Program (IODP) Expedition 350, 351 and 352 ~ Comprehensive Understanding of Arc Evolution and Continental Crust Formation ~**

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From March 30 to September 29, 2014, the *JOIDES Resolution*<sup>\*1</sup>, a U.S. scientific drilling vessel, will embark on her next mission as part of the International Ocean Discovery Program<sup>\*2</sup> (IODP). The mission is titled "Comprehensive Understanding of Arc Evolution and Continental Crust Formation."

For this research, drilling will be conducted during three expeditions, each lasting about two months, at the Izu-Bonin rear arc, at the Amami Sankaku Basin and at the Bonin ridge, respectively, in order to collect and analyze core samples. Wireline logging (collecting and recording data from a borehole after the drilling process) will also be performed at the drilling sites. The project aims to trace the processes of across-arc magmatism in the east-west direction of the Izu-Bonin-Mariana (IBM) arc system, where the Pacific Plate subducts beneath the Philippine Sea Plate, and to clarify the nature of the pre-existing crust and mantle in the region prior to subduction onset, and the process of subduction initiation. A total of 88 researchers from the U.S., Europe, China, Korea, Australia, Brazil and Mexico, including 15 researchers from Japan will be participating in these expeditions. The drilling is expected to reveal the special and temporal evolution of arc magmas within a single oceanic arc through 50 million years. In the future, the IODP also plans to use the deep-sea scientific drilling vessel CHIKYU for ultra-deep drilling into the arc crust to sample unprocessed juvenile continental-type crust.

<sup>\*1</sup> *JOIDES Resolution*

The U.S. riserless drilling vessel operated. Compared to the deep-sea scientific drilling vessel CHIKYU by Japan, it is usually used to drill in shallow water.

<sup>\*2</sup> International Ocean Discovery Program (IODP)

The International Ocean Discovery Program is a multinational cooperative project launched in October, 2013. At present, the participants consist of 27 nations, including Europe (19 countries), China, South Korea, Australia, India, New Zealand, and Brazil. Implementation mainly uses two ocean drilling platforms, the scientific drilling vessels D/V CHIKYU operated by Japan and the *JOIDES Resolution* by the U.S., and the option to charter mission-specific platforms by Europe. By drilling into the seafloor, the research aims to shed light on global environmental changes, the

earth's mantle and crust dynamics and tectonics, and the biosphere beneath the seafloor

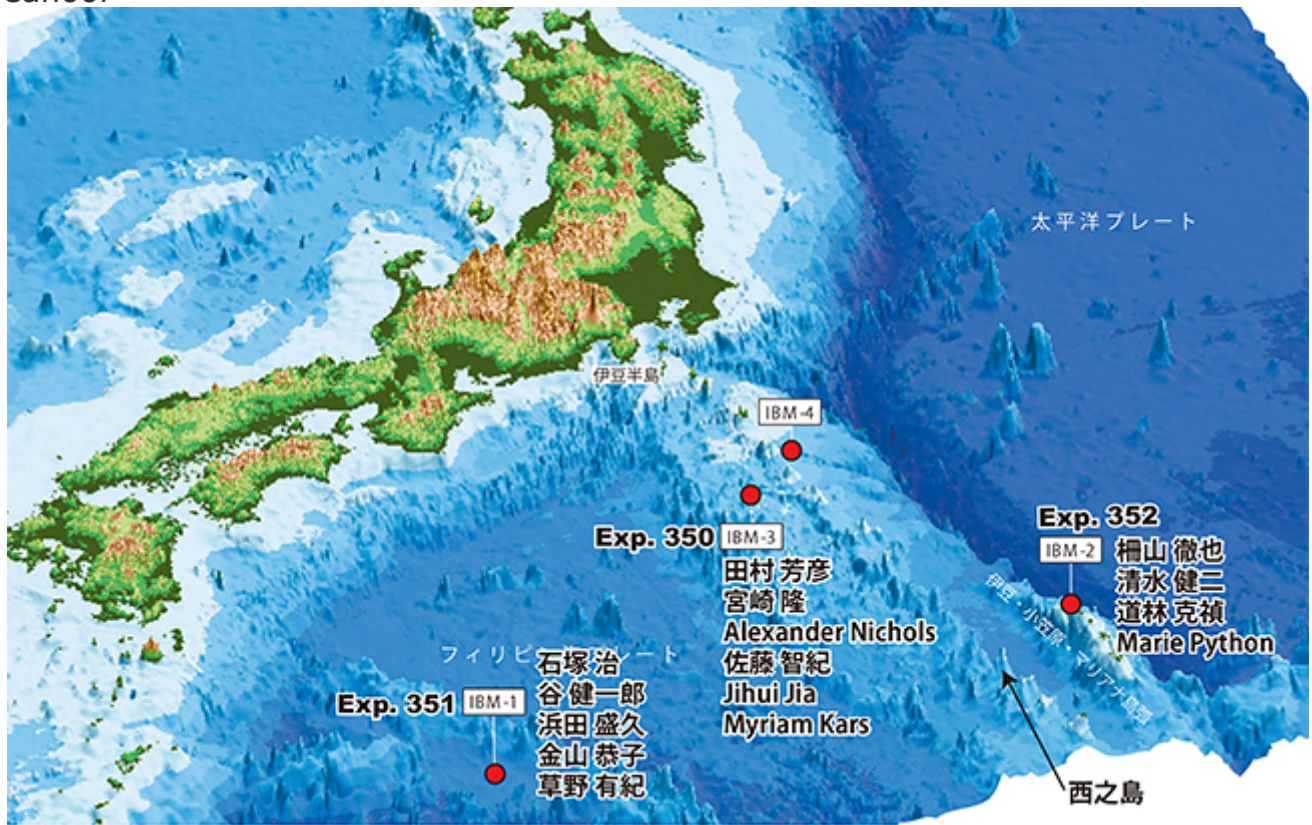


Figure 1: Drilling sites for this mission

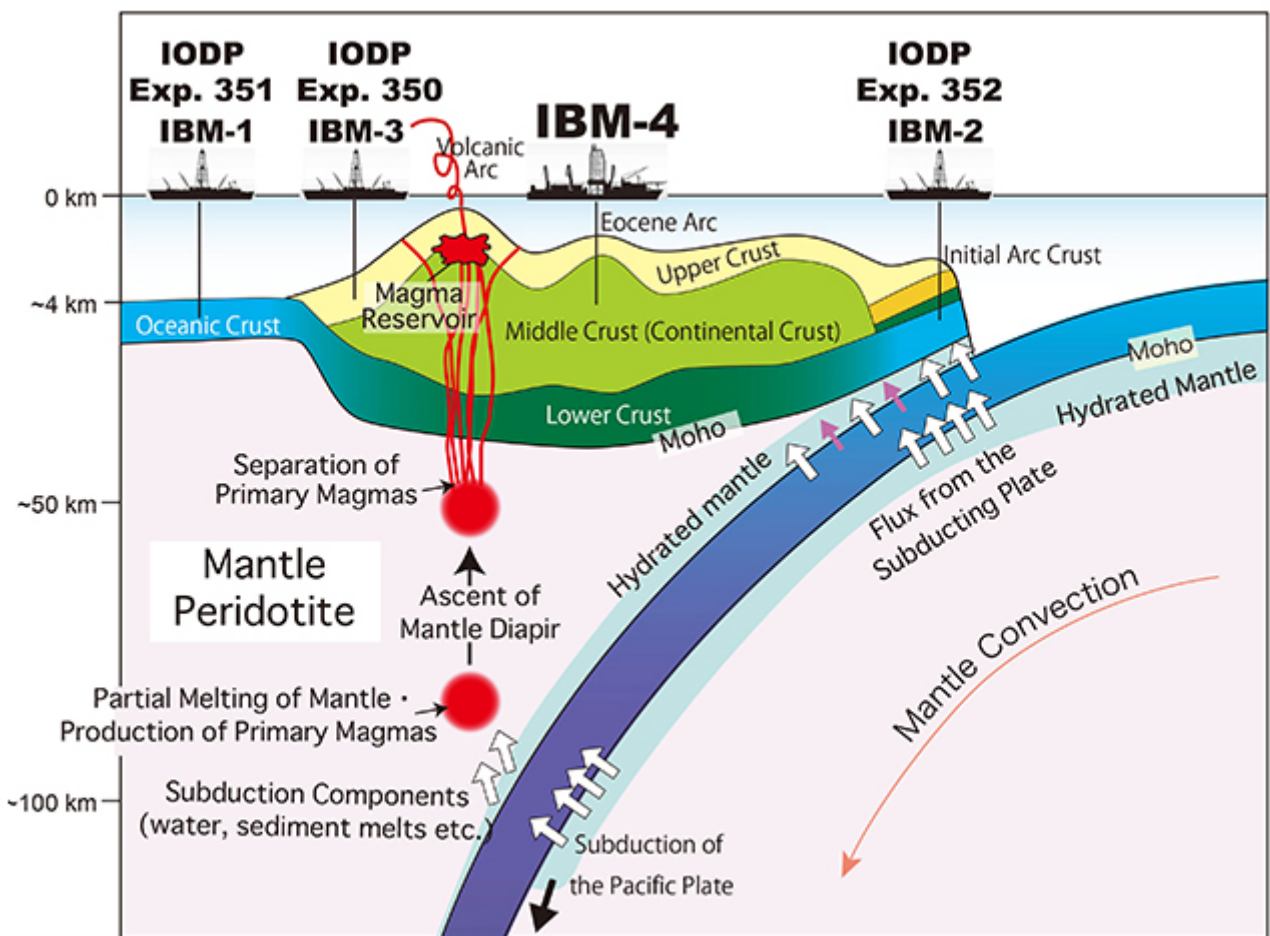


Figure 2: Drilling sites and structure of dynamics along plate subduction zones

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