

Magmatism events of the Panay Island, Center Philippine and its tectonic implications

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In southern end of the Manila trench Palawan continental crust collides with the Philippine Mobile belt that forms the Mindoro-Panay orogenic belts. The Panay island can be separated into two tectonic terranes. Eastern Panay is belonging to the Philippine mobile belt and the Antique Range is located on western side, which is composed of deformed Eurasia continental crust. Previously studies suggest that the Mindoro-Panay orogeny started from late Early Miocene age (20-16Ma) and ended in Pliocene. Here we use the zircon U-Pb dating to analysis the emplacement ages of the igneous rocks including the andesite to ophiolite. We further collect the river sands and boulders to obtain the comprehensive magmatism events to discuss the tectonic history of the Panay island.

To the western terrane we date the diorite, andesite and river sands which shows the magmatism events from 20-12Ma. The gabbro and plagiogranite show consistent ages 44-42Ma from north to south of the western Panay island. In eastern terrane both diabase and granite shows ca. 30 Ma age. The 44-42Ma and 30 Ma events could be related with opening of the Celebes Sea and western subduction of Western Philippine Sea plate. Previously researches suggested that the 20-12Ma magmatism events (diorite, andesite, basalt) could be related with collision events. Here we propose that the magmatism events are related with opening of Sulu Sea basin(20-15Ma) rather than collision. Considering the final magmatism event from 12Ma and the oldest reset ages of zircon fission track is ca. 6-7Ma in Mindoro island, we proposed that the Mindoro-Panay collision event started from late Miocene, and it is still on going.

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