

Water in Clinopyroxene Megacrysts and Basalt of Maguan Southwest China: New Constrains on New Tethys NE Subduction

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Water in clinopyroxene megacrysts hosted by the Cenozoic basalts of Maguan in the junction of the Yangtze block, the South China block and the Ailaoshan fold belt were evaluated by Micro Fourier transform infrared spectroscopy. It ranged from 318-693 ppm. Water in the basalts which were calculated by $D_{cpx/melt_water}$ were 1.67%-6.3% (wt.%). The in situ Sr isotopes of Clinopyroxene megacrysts are from 0.70392~0.70506. This suggested the melt of basalts were rich in water and the basalt melts originated from the transition zone where is the biggest water reservoir in the mantle. In the Neogene, the Western Pacific ocean crust retreated eastwards, at the mean time, the Neo-Tethys ocean crust subducted towards Northeast and crossed into the boundary between the asthenosphere and the transition zone. It is the key to the original melt of basalts in the Maguan.

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