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High – K Arc Volcanism Postdating the Eurasia-Northern Palawan-Philippine Mobile Belt Collision

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The arc-continent collision comprising the Philippine Mobile Belt and the North Palawan Continental Block has been the object of geologic interest in recent years. While many lithological and structural studies have been conducted in this arc-continent collision zone, there are few studies on pre and post collision magmatism. Currently, there are no active volcanism on the loci of arc continent-collison, but (probably) Pleistocene volcanism in Mindoro and Marinduque clearly postdate collision. These post-collision lavas contain unequivocal arc magmatic signatures (e.g., high LILE/HFSE), but when compared with other Philippine lavas show distinct differences. For example, Mindoro and Marinduque lavas are among those with highest K/Na ratios in the Philippine archipelago. Available isotopic data also indicate that these lavas have enriched (higher Sr and lower Nd) signatures vis-à-vis other Philippine lavas. The Mindoro lavas also plot in adakite fields (using Sr/Y vs Y), but clearly could not come from slab melting because there is no more slab underlying the volcanic edifice. A more probable origin of the enrichment could be increased continental sediment input into the arc source which was subsequently rifted by the ongoing strike-slip movements along the Philippine Fault Zone.