

Andesites in the Neoproterozoic Veligallu and Gadwal greenstone terranes, eastern Dharwar craton, India: Similar lithology – contrasting petrogenesis

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The Veligallu and Gadwal greenstone terranes are N-S trending linear schist belts located to the south and north of the Proterozoic Cuddapah Basin, respectively. Although, the andesites in both the greenstone belts are of calc-alkaline nature, the andesites in the Veligallu belt are of high-Mg type, whereas, those that are in the Gadwal belt are normal andesites. Further, the two greenstone belts comprise of similar lithological association. In the sense that the andesites are associated with tholeiitic arc – back-arc type basalts and adakites [1-3]. The bulk-rock geochemical attributes of the andesites however, indicate distinct petrogenetic signatures. For example, the chondrite normalized light rare earth element abundances in the Gadwal andesites are about five times higher compared to the Veligallu andesites ($La_N = 149$ versus 29); and their interelemental ratios suggest an Andean-type arc setting for the Gadwal andesites compared to a primitive island arc genesis for the Veligallu andesites (Fig. 1).

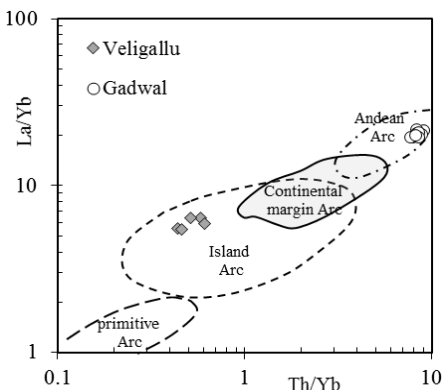


Figure 1: Figure and fields are after Condie [4].

[1] Khanna (2013) *Curr. Sci* **104**, 632-640. [2] Khanna *et al.* (2014) *Geochim. Cosmochim. Acta* **127**, 10-24. [3] Khanna *et al.* (2015) *Precambrian Res* **258**, 260-277. [4] Condie (1989) *Lithos* **23**, 1-18.