



## **Multiphase magmatism of the Neotethyan Central Ophiolite Belt in Myanmar: Zircon U-Pb age and whole-rock geochemical constraints from the Sagaing-Minwun ophiolite**

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There are three major ophiolite belts in Myanmar: The Eastern, Central and Western Belts (Hla Htay et al. 2017). The Late Jurassic-Cretaceous Eastern Belt (e.g. the Inkhaingbum-Myitsone ophiolite) was formed by the Mesotethyan tectonics, whilst the Early Cretaceous Western Belt (e.g. the Kalaymyo ophiolite) was formed by the Neotethyan tectonics (e.g. Liu et al. 2016). In this study, ophiolitic rocks (banded chert, meta-basalt, meta-dolerite, amphibolite and serpentinitised peridotite) are identified at the Sagaing-Minwun Hill (NW of Mandalay) in the Central Belt. Igneous zircons from two amphibolite samples were LA-ICP-MS U-Pb dated to be  $117.1 \pm 1.5$  Ma (MSDW = 0.73, n = 15) and  $96.6 \pm 2.0$  Ma (MSDW = 0.84, n = 7). These ophiolitic rocks were intruded by early Miocene granites ( $20.5 \pm 0.4$  Ma). Compared with the Western Belt ophiolites, the ca. 117 Ma age is coeval with the Kalaymyo ophiolite (ca. 114 Ma; Liu et al. 2016), whilst the ca. 96 Ma age is coeval with the Andaman ophiolite (ca. 95 Ma; Pedersen et al. 2010). Therefore, our new data suggest highly similar ages for the Early and Late Cretaceous magmatic activities in the Central and Western Belt. The amphibolite samples fall into the back-arc basin basalt (BABB) field in the Th/Yb vs. Ta/Yb tectonic discrimination diagram, and show distinct (primitive mantle-normalized) LILE enrichments and negative Nb-Ti anomalies. We suggest that unlike the Western Belt, where magmatism comprises OIB- and MORB-type (Khogenkumar et al. 2016), the Central Belt ophiolites (e.g. the Sagaing-Minwun ophiolite) comprise mainly supra-subduction type. We propose that the Central Belt may have been tectonically active (probably as a back-arc basin) when the Cretaceous Neotethyan subduction occurred in the Western Belt.

### References

- Khogenkumar et al. 2016, *Jour of Asian Earth Sciences*, v. 116, p. 42-58.  
Hla Htay, Khin Zaw, Than Than Oo, 2017 Chapter 6. In: Barber, A.J., Khin Zaw & Crow, M.J. (eds.). *Myanmar: Geology, Resources and Tectonics*. Geological Society, London, Memoir.  
Liu, C. Z. et al. 2016, *Geology*, v. 44, p. 311–314. Liu, C. Z. et al., 2016b, *Lithos*, v. 264, p. 495–508.  
Pedersen et al. 2010, *Journal of the Geological Society, London*, v. 167, p. 1105–1112.