A study on the origin of the colored bands in Keelunshan andesite, Taiwan

T.C. LIU[1]*, J.Y. CHANG[1] AND Y. IIZUKA[2]

[1]Department of Earth Science, National Taiwan Normal Univ., Taipei, TAIWAN (*correspondence: liutc@ntnu.edu.tw) (chioujs@yahoo.com.tw)

[2]Institute of Earth Sciences, Academia Sinica, Taipei, TAIWAN (yiizuka@earth.sinica.edu.tw)

There are two types of colored bands in Keelunshan andesite: thick and thin. The mafic minerals are paralleled to the colored bands of the flow structure. The minerals in the light colored band are the same as those in the dark colored band. They are biotite, hornblende, quartz, plagioclase, augite, and magnetite.

The whole rock compositions of the dark colored band are higher than those in the light colored band in MgO, CaO, and Na_2O. On the other hand, The whole rock composition of the dark colored band are lower than those in the light colored band in SiO_2, K_2O, and loss on ignition. The Mg number of augite in dark colored band is from 77 to 92, whereas The Mg number of augite in dark colored band is from 81 to 86. The An contents of plagioclase in two bands are from 47 to 86.

Based on the whole rock geochemistry and the composition of the minerals in the two bands, the mingling was suggested to the main origin of the colored bands.

Magmatic genesis and age constraints of the granitic plutons in the Siziwangqi area of Inner Mongolia, North China Craton

WEN-CAN LIU[1]*, ZHI-GUANG ZHOU[2] AND CHANG-FENG LIU[2]

[1]School of Land Science and Technology, China University of Geosciences, Beijing 100083, China (*correspondence: liuwenc@263.net)

[2]College of Geoscience and Resources, China University of Geosciences, Beijing 100083, China

A large volume of late Paleozoic granitoids outcrop along the northern margin of the North China Craton, in the middle region of Inner Mongolia. Ther are mainly composed of granodiorite, monzogranite and synogranite. The plutons arrange in NE, forming a giant plutonic belt, more than 100 km long and ~70 km wide[1]. The plutons are featured by abundant mafic microgranular enclaves (MMEs). Petrological, mineralogical and geochemical compositions for the MMEs and the host-rocks indicate a characteristics of mantle origin magma, which was contaminated by lower crust melting. These mantle origin mafic magma probably provide both heat for lower crust melting and substances for crust growing. Zircon separates from variable plutons were dated by using LA-ICP-MS (U-Pb) method and yielded ages of ~260 Ma (254 ± 9.8 Ma, 260 ± 27 Ma, 253.6 ± 6.6 Ma, 259.9 ± 3.5 Ma, 261.3 ± 3.8 Ma, 253.9 ± 7.2 Ma). It is suggested that this Permian plutonic belt was emplaced during the post-collisional extension [2-4], thus the collision occurring between the North China Craton and the Siberian Plate along the Xing-Meng orengic belt should be earlier than 260 Ma.

[1] Hong *et al*. (2008) *J. Asian Earth Sci.* **23**, 799-813. [2] Jian *et al*. (2008) *Lithos* **101**, 233–259.[3] Chen *et al*. (2009) *J. Asian Earth Sci.* **34**, 245–257. [4] Miao *et al*. (2008) *J. Asian Earth Sci.* **32**, 348–370.