The Borneo-Vanuatu Geanticline (BVG) reported earlier by the author (Choi, 2005) was found to connect to the Siberian Craton via the East Asia Reflective Axial Belt (EARAB) in China (Figs. 1 and 2). This geanticlinal trend, here called the “South Pacific-Siberia Geanticline” (SPSG), forms one of the most outstanding Archean structural elements on the Earth’s surface, together with the “North-South American Geanticline” (NSAG), an antipodal counterpart in the western hemisphere.

The SPSG has been subject to strong magmatic and tectonic activities in the Proterozoic and Phanerozoic, notably in the South Pacific and Southeast Asia region where uplift and oceanization-induced subsidence took place in the Cenozoic. The Yunnan surge channel in South China, characterized by a kobergen and well-developed low-velocity layers in the upper mantle and the lower crust, sits on this geanticline (Fig. 3). Many large-scale mineral deposits have been formed on this Geanticline, including Oyu-Tolgoi copper-gold deposit in the southern Mongolia (Fig. 3).

The fact that the framework of these two global-scale geanticlinal trends is still preserved almost intact flatly contradicts large-scale horizontal movement of the Earth’s crust and mantle, and provides constraints on geodynamic models of the Earth.

Fig. 1. Global geanticlinal trends superimposed on the magnetic map by Korhonen et al. 2007. EARAB = East Asia Reflective Axial Belt by Zhang and Wang (1995)

* Corresponding author. E-mail: dchoi@ievpc.org
References


---

Fig. 2. Free-air gravity to degree 10 around the Australian continent and the axis of the Borneo-Vanuatu Geanticline. This map is considered to show the density contrast from the surface to the core-mantle interface (2,900 km; Circum-Pacific Council for Energy and Mineral Resources, 1985). Cited from Choi, 2005.

Fig. 3. Tectonic mosaic map of China by Zhang and Wang (1995). The Borneo-Vanuatu Geanticline extends northward as the Yunnan Guizhou Anticline and the East Asia Reflective Axial Belt.