Geophysical Research Abstracts
Vol. 15, EGU2013-2129-2, 2013
EGU General Assembly 2013

Progress of SinoProbe: Deep exploration in China, 2008 - 2012

Shuwen Dong (1), Rui Gao (2), Qingtian Lu (3), Jingsui Yang (2), Wenbo Wei (4), Xueqiu Wang (5), Qunce Chen (6), Yaolin Shi (7), Danian Huang (8), Xuanhua Chen (1), and Qi Zhou (1)

(1) Chinese Academy of Geological Sciences, Beijijng, China (xhchen@cags.ac.cn), (2) Institute of Geology, Chinese Academy of Geological Sciences, Beijijng, China, (3) Institute of Mineral Resources, Chinese Academy of Geological Sciences, Beijijng, China, (4) China University of Geosciences, Beijing, China, (5) Institute of Geophysical and Geochemical Exploration, Chinese Academy of Geological Sciences, Langfang, Hebei, China, (6) Institute of Geomechanics, Chinese Academy of Geological Sciences, Beijijng, China, (7) Graduate University, Chinese Academy of Sciences, Beijing, China, (8) Jilin University, Changchun, Jilin, China

The SinoProbe is a multidisciplinary earth science research program, of unprecedented scope and scientific ambition on geosciences. The overall aim of the SinoProbe is to reveal the composition, structure and evolution of the continental lithosphere in China. The SinoProbe (2008-2012) have successfully conducted researches and experiments on crust and mantle exploration technologies, accumulated abundance of experiences, and significantly accelerated China's development on deep exploration. It has collected deep seismic reflection profiles in Tibet, South China, North China, and Northeast China, at a length of ca. 6000 km, which accounts much more length conducted before in China. It has carried out national-wide geochemical baseline (with 78 elements) and magnetotelluric (MT) Array (by 4°•4°, and 1°•1° in North China and Tibet), 3D exploration in ore deposit districts in Eastern China, several continental scientific drilling holes, regional in-situ stress monitoring networks, geodynamic modeling of the lithosphere underneath the continental China, and instrumentation development for deep exploration in China, etc. For the first time, SinoProbe has obtained deep seismic reflection evidence for the thick-crust Moho surface in Qinghai-Tibet Plateau and for the lithospheric mantle in Northeastern China. The preliminary results from MT Array observation of SinoProbe shows an abnormal electric-conductivity structure of the lithosphere under the Ordos basin, providing important evidence for the evolution mechanism of North China craton. The combing results of the SinoProbe have made some new understandings on the deep processes of the Mesozoic – Cenozoic geological evolution of the continental China.