211

TECTONIC MAP OF THE EARTH'S POLAR REGIONS (TEMPORE) - AN IPY 2007-2008 PROJECT

G.E. Grikurov, G.L. Leitchenkov

Research Institute for Geology and Mineral Resources of the World Ocean, VNIIOkeangeologia, St.-Petersburg, Russia

Exploring new scientific frontiers, including those of planetary scale, is a recognized IPY 2007-2008 priority. Among such frontiers awaiting scientific exploration is a comparative study of tectonic structure and evolution of the Earth's Polar regions – the Arctic and the Antarctic. It is proposed that all earth science datasets already existing in the Arctic and the Antarctic and additional data acquired prior to and during IPY 2007-2008 will be synthesized in a Tectonic Map of the Polar Regions of the Earth to be compiled under the auspices of the Commission for the Geological Map of the World. A unified legend for that map was elaborated recently in VNIIOkeangeologia as a first step for map compilation. The proposed legend follows the fundamental principle applied in compilation of 1:5M International Tectonic Map of Africa and the tectonic maps of Asia 1:5M and 1:2.5M. We interpret this principle as identifying the mapped structural units and features, in the first place, in terms of their genetic relation to plate boundaries, whereas the traditional subdivision into continental versus oceanic crust affinities comes farther down the list. In accordance with this approach, all structural assemblages and features from Eoarchean to present are assigned to two major tectonic surroundings: (1) Pre-Neoproterozoic environments believed to predate the appearance of distinct lithospheric plates and responsible for formation of continental shield complexes; (2) Neoproterozoic and Phanerozoic settings associated with global onset of plate tectonics and subdivided in (2a) those peculiar of divergent and convergent plate boundaries where oceanic crust and continental fold belts/magmatic arcs are generated, respectively, and (2b) characteristic of within plate situations and leading to formation of broad range of platform covers, rift/aulacogene sequences, basin formations, etc. on cratonized and/or variously modified continental crust, and of basaltic plateaus on oceanic crust. The first digital TEMPORE products will be reported at 33rd IGC and accompanying CGMW General Assembly in Oslo, 2008.