

New Concepts in Global Tectonics

NEWSLETTER

No. 48, September, 2008 ISSN: 1833-2560

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The eroded relic of massive sheet flows are typically referred to as the “Missoula Floods” and failure of a 600m high ice dam near the mouth of the Clark Fork River is most frequently cited as the cause of flooding. However, the study reveals evidence of flood waters originating at elevations above that of a glacially impounded Lake Missoula. Massive sea level changes towards the end of the Pleistocene are implied.

Geology and tectonic development of the Pacific Ocean. Part 3, Structure and composition of the basement, *Boris I. VASILIEV and Dong R. CHOI*.....23

The basement of the Pacific Megabasin is heterogeneous, heterochronic and has melanocratic structures with ultramafic and mafic composition. The original composition of the crust under the ocean is indisputably continental which has been altered by repeated tectono-magmatic processes, as shown by the isotope structure of lead, strontium and niobium in erupted rocks of oceanic islands, and by numerous discoveries of continental rocks and volcanic composition. Future studies will present more evidence of the continental nature of the “oceanic crust”.

Geology and tectonic development of the Pacific Ocean. Part 4, Geological interpretation of seismic tomography, *Dong R. CHOI and Boris I. VASILIEV*.....52

Comparison between geology and tomography shows that slow mantle underlies the western Pacific Ocean (where the Mesozoic basins are developed) and fast mantle underlies continents and the eastern Pacific. The fast shallow mantle in the western Pacific is related to the subsidence after discharging gases and liquids to the surface in Jurassic to Cretaceous. The subsidence of the Pacific Megabasin is considered to be a result of a massive energy surge from the core to the overlying mantle in the Western Pacific Deep Mobile Belt in the Triassic to Jurassic time. The relative velocity variation is more likely related to the level of chemical depletion rather than temperature variation.

Seismic focal zone as a system of deep faults, *Roman Z. TARAKANOV*.....61

A large-scale analogy is drawn between compression and tension stresses acting on an elementary sample and those taking place within the seismic focal zone itself. Being subjected to near-horizontal compression and near-vertical tension forces, these two objects would end up within a similar field of stresses. Under these conditions the seismic focal zone appears to exist within the constant field of maximum tangential stresses and is thought to be the analogy of one of the nodal planes inclined with respect to the horizon at an angle of about 45°.

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