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Lithosphere profiles across Central Asian Orogenic Belt in Uzbekistan

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This study was made with complex geophysical and geological observations by the DSS-MRW seismic profiles, which cross CAOB in the southern Tien Shan in part of Uzbekistan. The southern Tien Shan is situated along the SW margin of the Central Asian Orogenic Belt-one of key region for understanding both the amalgamation of Eurasia and the Phanerozoic growth of the CAOB itself. The aim of our study was to reveal new features, which characteristic of the upper mantle rocks, related to morphology of bodies. their physical properties, consisting mainly in their contrasting values for contiguous blocks, and general increased velocity and density of the rocks they contain. The most interesting results were obtained by three DSS profiles in Central Kyzylkum: anomalous geological objects (Muruntau, Kokpatas, Kuldjuktau and other) having anomalous high velocity and density values, have been mapped at different depths within the part of CAOB. The alteration zones, the tectonic faults and circular structures related to the cones and calderas determined these methods and checked by group truth studies may the target areas to explore for some new deposits.New regional features have been revealed:they include peculiarities of the Earth's crust's deep geological structure and spatial distribution of deposits:they are contrast areas of the earth's crust geoblocks with anomalously high and low seismic and density parameters. Mapping of these zones helps select new ways in th search for mineral deposits. All the final products was created using ArcGIS and RS methodologies:1)DEM on the base of SRTM dataset;2) 3-D models of crustal basement and Moho surface;3) 3-D potential fields modeling;4) tabular database of tectonic, boreholes data;5)various types of original geological information concerning the Paleozoic to present geological evolution of the region.