AGU 100 ADVANCING EARTH AND SPACE SCIENCE FALL MEETING Washington, D.C. | 10–14 Dec 2018

T41D-0337: The structure and composition of the Middle Paleozoic Armovka nappe of the Fore Range of the Greater Caucasus and their relationship with the underlying rocks of the Precambrian basement

Thursday, 13 December 2018
08:00 - 12:20
Walter E Washington Convention Center - Hall A-C (Poster Hall)

The Middle Paleozoic Armovka nappe was identified as a unit independent from the Blyb metamorphic complex, based on the study of the composition, structure and age of the crystalline base of the Fore Range of the Greater Caucasus (Kamzolkin et. al. 2018).

The Armovka nappe is composed of mica, garnet-mica, and kyanite schists. Garnets have a specific atoll-like morphology, which can indicate the conditions of the eclogite or epidote-amphibolite facies of metamorphism. There is high-titanium red-brown biotite encapsulated within the epidote - an indicator of high-temperature rocks. Large bodies of serpentinized spinel lherzolites, individual sheets of amphibolized eclogites are also found here.

Structurally Armovka nappe is a monoclinal, with planar stuctures dipping to the north-north-east with angles of about 20 degrees. Monotonous orientations of the Armovka rocks are significantly complicated by faults and block deformations, which led to the appearance of steep dip angles up to 50 degrees, especially in the zone of contact with the underlying rocks. The folds are not common for the nappe and are confined only to its lower boundary and local faults.

The Armovka nappe overlies the rocks of the crystalline Upper Vendian basement represented by the Balkan essentially mafic suite Intruded by the quartz metadiorite Balkan massif. According to the latest, in the area of Mount Markopidzh, a thick packet of blastomylonites develops.

The age of the Armovka nappe is Middle Paleozoic. Thus, the datings of paragneses from the Big Blyb stream obtained by us gave an age of 361.4 ± 3 Ma (LA-ICP-MS for 25 zircon grains).

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