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## Tectonics of Wrangel Island, Russian Arctic

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Wrangel Island represents the most uplifted part of Wrangel-Herald Arch located in the frontal part of the Cimmerian (Late Mesozoic) orogen of Northeastern Eurasia. The Island is composed of intensively deformed Neoproterozoic metamorphic basement and uncomfortably overlying folded and thrustured Silurian-Triassic sedimentary sequences [1, 2]. It is believed that the complicated north-vergent fold-thrust structures were formed as a result of the Late Neocomian collision between Chukotka microcontinent and Siberian continent.

Field studies of 2006 and 2014 made it possible to set up three tectonic zones of the Island: Northern, Central, and Southern, which differ in composition and age of tectono-stratigraphic units. The Northern Zone consists of Silurian-Triassic (?) sedimentary rocks. The basement is not exposed. The structural pattern of the Silurian–Middle Devonian sequence was formed as a result of latitudinal compression, probably in the Middle–Late Devonian. This tectonic event, which generally corresponds to the Ellesmerian orogeny, which is typical for the Arctic Alaska and Canadian Arctic Archipelago [2].

The Central Zone consists of the metamorphosed basalt and felsic volcanics that are overlain by Carboniferous and Permian limestones with basal conglomerates. Age of volcanics regarded as Late Proterozoic-Early Cambrian [3], Devonian-Early Carboniferous [4, 5], Early Carboniferous [1] or Late Carboniferous [6]. Zircons from felsic volcanics revealed ages as old as  $598.6 \pm 7.5$  and  $594.4 \pm 7.1$  Ma (U-Pb, LA-ICP-MS). Zircons from basalts include grains with ages  $\sim 500 - 600$  Ma (U-Pb, SHRIMP-II). Early Carboniferous and Permian limestones are slightly deformed. Conglomerates overlying the basalts do not contain zircons younger than 550 Ma.

The Southern Zone consists of the Neoproterozoic metamorphic basement (Wrangel complex) and strongly deformed Devonian – Triassic sedimentary rocks. Wrangel complex is composed of volcanic, volcanoclastic and clastic rocks metamorphosed in greenschist facies (Kos'ko et al., 1993). New U-Pb data indicate two Neoproterozoic age clusters at  $\sim 690-730$  and  $\sim 590-610$  Ma in Wrangel complex, corresponding to the age of granitic plutonism and felsic volcanism respectively. The granites contain inherited zircons of Meso-, Paleoproterozoic and Neoproterozoic ages, supposing the existence of ancient (Neoproterozoic-Mesoproterozoic) rocks in the basement of Wrangel Island. Wrangel complex was stratigraphically overlain by Devonian conglomerates. Paleozoic of the Southern Zone is composed of carbonate and clastic rocks. Triassic turbidites are widespread and occupy southern part of the Zone. The Triassic rocks overthrust the Carboniferous and Permian sedimentary sequences along the Mineeva Thrust Zone.

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