New data from the expedition on Severnaya Zemlya (2016), Novaya Zemlya (2014, 2015) and Franz Josef Land (2015) Archipelagoes

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Investigations of Severnaya Zemlya and the SE part of the October Revolution islands are comprised of Lower Paleozoic deposits intruded by mafic and felsic intrusions, of supposed Pz & Mz age. Our results showed widespread Cambrian deposits across the region and Ordovician tuffs and lavas with ages of 461 - 472 ± 3 Ma. The granites have similar ages (previously considered to be late Devonian-Middle Carboniferous and Mesozoic in age). The age of basite dykes are early Devonian (407, 416 Ma).

In northern Novaya Zemlya, the existence of the Caledonian deformation was confirmed. A regional unconformity between late Silurian - Early Devonian strata and underlying Neoproterozoic-Early Paleozoic sediments was recognized on the west coast near the Inostrantceva Gulf in the north to the Bezymyannaya bay in the south. Detrital zircon investigations of the Upper Silurian-Lower Devonian basal conglomerates and sandstones showed dominant Neopterozoic (593-652 Ma) age peaks. Structural studies indicate that Early Cimmerian deformation overprints older deformation. Mafic dikes around of Cape Zhelaniya, previously considered to be Mesozoic in age, formed on the Devonian and Carboniferous boundary (346.32 ± 15.34 Ma, Ar40/Ar39).

On Franz Josef Land (Galya and Gray-Bell islands), the composition of clasts from Jurassic conglomerate include metamorphic rocks and late Devonian-Early Carboniferous granites (328 ± 1.1Ma; 345.3 ± 0.81; 363 ± 1,1 Ma).