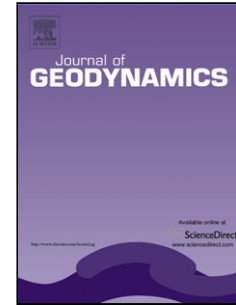


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## **Tectonics of the New Siberian Islands Archipelago: Structural Styles and Low-Temperature Thermochronology**

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### **Abstract**

Tectonic evolution of the New Siberian Islands (NSI) has been revealed based on detailed structural investigations and a (U-Th)/He low-temperature thermochronologic study of detrital zircons (ZHe) and apatite (AHe). Our study supports models claiming a non-Siberian affinity of the NSI and furthermore suggests that the study area formed a part of the Arctic-Alaska-Chukotka microcontinent. Seven stages of deformation have been revealed. The earliest stage (Stage 1) involved contractional deformation with transport directions towards the W-to WSW and occurred during the Late Cambrian across the De Long Islands. The next episode of deformation (Stage 2) has been revealed based on the low-temperature thermochronology (ca. 378–414 Ma, ZHe) and structural data. A pre-Frasnian angular unconformity formed as a result of Stage 2 deformation on Kotel'nyi Island, which involved contractional deformation with S-to

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