THE MULTIPHASE KARLSHAMN PLUTON, S. SWEDEN: NEW NORDSIM ZIRCON AGES

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The Karlshamn pluton is one of the numerous intrusions of Mesoproterozoic granitoids known from the area around the southern Baltic Sea. It consists mostly of coarse-grained, K-feldspar megaporphyritic, very high-K calc-alkaline, marginally metaluminous monzonites to granites with rapakivi and anti-rapakivi textures. The western and eastern parts of the pluton differ by their structural pattern and compositions. The eastern part is made up of monzonites, quartz monzonites and quartz syenites, while quartz syenites and granites dominate in the west. They show mainly magmatic foliations of various degrees. The pluton is cut by broadly E-W striking synplutonic shear zones and by ENE-WSW striking veins that are filled with pegmatite.

In this study, zircons from two samples, one from each part of the intrusion, have been dated using the NORDSIM ion microprobe. Magmatic zircons from the eastern part are 1445 ± 11 Ma old. They are quite homogeneous and concordant. Zircons from the western part are more complex, with 1453 ± 50 Ma cores and 1438 ± 7 Ma rims (overall age 1441 ± 13 Ma). The overlapping ages indicate that cores and rims formed from separate batches of magma during the same general magmatic event.

Together with previously dated ca. 1445, 1452 and 1465 Ma old Karlshamn-type granites (Kornfält 1996, SGU C828; Kornfält & Vaasjoki 1999, SGU C831) and the 1458 and 1442 Ma granitoids further south (Cecys et al. 2002, GFF 124), the present results suggest an extended, multiphase evolution of the Mesoproterozoic granitoid magmatism and associated deformation in the crust of southern Sweden.