

Circum-Arctic Structural Events: Tectonic Evolution of the Arctic Margins and Trans-Arctic Links with Adjacent Orogens

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Cover: View NNE across Kulutingwak Fiord towards Mitchell Point on the northern coast of Ellesmere Island, Nunavut, Canada. This area consists of Mesoproterozoic to early Neoproterozoic granitoid gneiss with minor mica schist, amphibolite, quartzite, and marble of the crystalline basement of the exotic and composite Pearya Terrane. Photo by Nicola Boll.

Dedication

This volume is dedicated to Dr. Franz Tessensohn (1939–2019), who initially established terrestrial geoscientific polar research at the Bundesanstalt für Geowissenschaften und Rohstoffe (BGR). In 1979–1980, Franz initiated an Antarctic geoscience research program in the Ross Sea area, which was titled “German Antarctic North Victoria Land Expedition” (GANOVEX), where he also aided in the construction of the BGR’s Gondwana Station in 1983. When the BGR extended its polar research to the Arctic, Franz organized the geoscientific program “Circum-Arctic Structural Events” (CASE) and led the first CASE expeditions to Svalbard (CASE 1), North Greenland (CASE 2), and Ellesmere Island (CASE 4, 5, and 6) between 1992 and 2000, and a ship-based expedition to Nares Strait in 2001. Without Franz’s guidance, organization, and scientific curiosity, the CASE program and Geological Society of America Special Paper 541 would not exist.



Photo courtesy Karsten Piepjohn.

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Preface

For more than 25 years, the German Federal Institute for Geosciences and Natural Resources (*Bundesanstalt für Geowissenschaften und Rohstoffe, BGR*) has been engaged in Arctic terrestrial geological research within the framework of its research program Circum-Arctic Structural Events (CASE). Beginning in 1992 and 1994 with regional expeditions to Spitsbergen and Greenland, CASE has subsequently developed into an internationally recognized circum-Arctic research program with expeditions focused on the structural evolution of the Arctic continental margins. The CASE program has so far incorporated over 110 international researchers, among them 25 early career scientists, into these circum-Arctic expeditions.

This volume, *Circum-Arctic Structural Events: Tectonic Evolution of the Arctic Margins and Trans-Arctic Links with Adjacent Orogens*, is a collection of new datasets and syntheses from various CASE-related expeditions undertaken over the past decade. The book is built upon the efforts and commitment of many international scientists who were supported by and helped to define the mission of the CASE research program. Their dedication to unravelling the complex puzzle of Arctic geology under the collaborative umbrella of CASE is reflected here in a comprehensive volume for the Geological Society of America (GSA) Special Paper series. This outstanding international cooperation was complemented by a thematic session at the GSA Annual Meeting held in Seattle, Washington, USA, during October 2017. We thank GSA for hosting the CASE session and for assistance in the publication of this Special Paper.

Beyond that I would like to emphasize the continuous support of volume editors William McClelland (University of Iowa, USA) and Justin Strauss (Dartmouth College, USA) for the CASE program and for paving the way to make this volume happen.

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