

Alfred Wegener Memorial Expedition

This document describes the first ideas about a plan for a Greenland expedition in memory of the 100 year anniversary of the discovery of "Continental Drift" by Alfred Wegener.

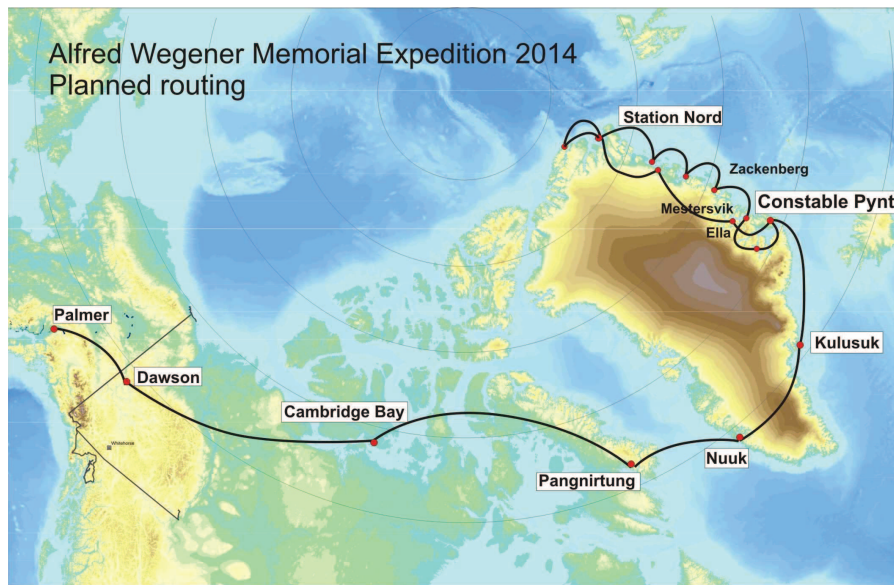


Fig. 1: Planned routing for the expedition. The routing between Palmer/Alaska and Constable Pynt in Greenland is not part of the expedition *sensu stricto*, but is the transport route for the aircraft.

The Plan

It is planned to organise a geological research expedition to the northeast (NE) coast of Greenland in memory of Professor Alfred Wegener. Wegener held the professorial post in the Department of Meteorology and Geophysics at Graz University from 1924 until his death in Greenland in 1930. Following the spirit of Alfred Wegener - who was one of the first Arctic explorers who used propelled motorised transport in the Arctic - it is planned to use small aircraft to explore the Caledonian geology of the least known part of Greenland: The northeast coast between Constable Pynt and the northernmost exposures of the island.

Logistic plan

For the expedition 2 or 3 *Piper Supercub* Aircraft will be flown from Alaska to Constable Pynt airport in Greenland by some of the worlds most experienced glacier pilots. There, the aircrafts will be joined by a team of geologists selected from Europe's leading experts on Arctic geology (Constable Pynt can be reached by commercial airline). From there, the geology of the Caledonide belt between Constable Pynt and the northern tip of Greenland will be investigated in a series of key locations closing missing links in the geological understanding of Europe's least explored region: the NE coast of Greenland. Due to the extreme inaccessibility of this coast, earlier expeditions to this region were limited to the proximity of the few runways in the region, few stops or boat access. The unique coupling of: **(a)** the extreme landing ability of *Piper Supercub* Aircraft on beaches, tundra land and glaciers with **(b)** some of the worlds leading pilots and **(c)**

the leading geologists on the region will promise unprecedented progress in the understanding of the geology of the Caledonides. Aviation gas will be supplied by *Kodiak Aircraft* from Europe directly to Constable Pynt.



Fig. 2: Images of the geology of the Caledonide belt of NE Greenland (Kong Oskar Fjord Region) taken from the air. Red dots indicate possible landing sites of Supercub aircraft (Photo: Deta Gasser).

Scientific relevance

The Caledonide belt formed some 400 Million years ago during Europe's oldest mountain building process. Large parts of the British Isles, Scandinavia, northern France and Eastern Greenland were formed at this time. The geology of this belt forms a crucial puzzle in the Paleozoic assembly of the European continent. The geology of the NE Greenland part of the Caledonides has long been an important aspect of this puzzle, both for its regional context and because of its unparalleled exposure. However, due to the extreme inaccessibility, the region remains the most enigmatic terrain of Europe and expeditions that have explored its geology have been sparse. As such, the rocks of NE Greenland still await exploration.

Social relevance

Alfred Wegener was a polar explorer and meteorologist. He may be best known for his 1912 publications on "Continental Drift". These articles (published in: Petermanns Geografische Mitteilungen in 1912) are generally considered as the "birth of plate tectonic theory". For his achievements, Alfred Wegener received a professorial position at the university of Graz in 1924, which he held until his death in Greenland in 1930. In Austria, the 100st anniversary of the discovery of plate tectonic theory is currently being honoured by a TV special (in spring), a lecture series (by: "Urania") and by a symposium of the "Naturwissenschaftlicher Verein für Steiermark". The expedition planned here will be led by scientists at Graz University and will thus be the scientific contribution to this celebration.



Fig. 3: Photographs showing the unique landing abilities of Piper Supercub aircraft on glaciers and in tundra land. (Examples shown are in Alaska).

The Team

Dr. Kurt Stüwe (Prof. for Earth Science, Graz University) will act as expedition leader. Kurt has been on and organised more than 20 expeditions to both the Arctic and the Antarctic. He has written more than 100 papers in top scientific journals, several text books and popular science texts. He is one of Austria most cited geologists.

Paul Claus (Ultima Thule Outfitters, Alaska) will be the chief pilot. Paul has more than 25000 hours flying experience in small aircraft in glaciated terrains of Alaska and the Arctic and he has been voted by several institutions and magazines as: "Best bush pilot in the world".

The following colleagues will play a key role in the expedition:

Dr. Chris Larsen (Prof. for Glaciology, Univ. of Fairbanks Alaska) will lead the glaciological aspects of the expedition. Chris is also pilot.

Dr. Arild Andresen (Prof. for Earth Science, Oslo University) is the leading scientist on NE Greenland geology. He will be responsible for choosing the key sites for the expedition.

Dr. Doug Rossilon (Plastic surgeon, Belgium) will be the expedition doctor. Dr. Rossilon will also be responsible for transport of aviation gas from Europe to Constable Pynt.

Aside from these colleagues, we will involve 2-4 other research personnel and/or pilots, including 1-2 students.

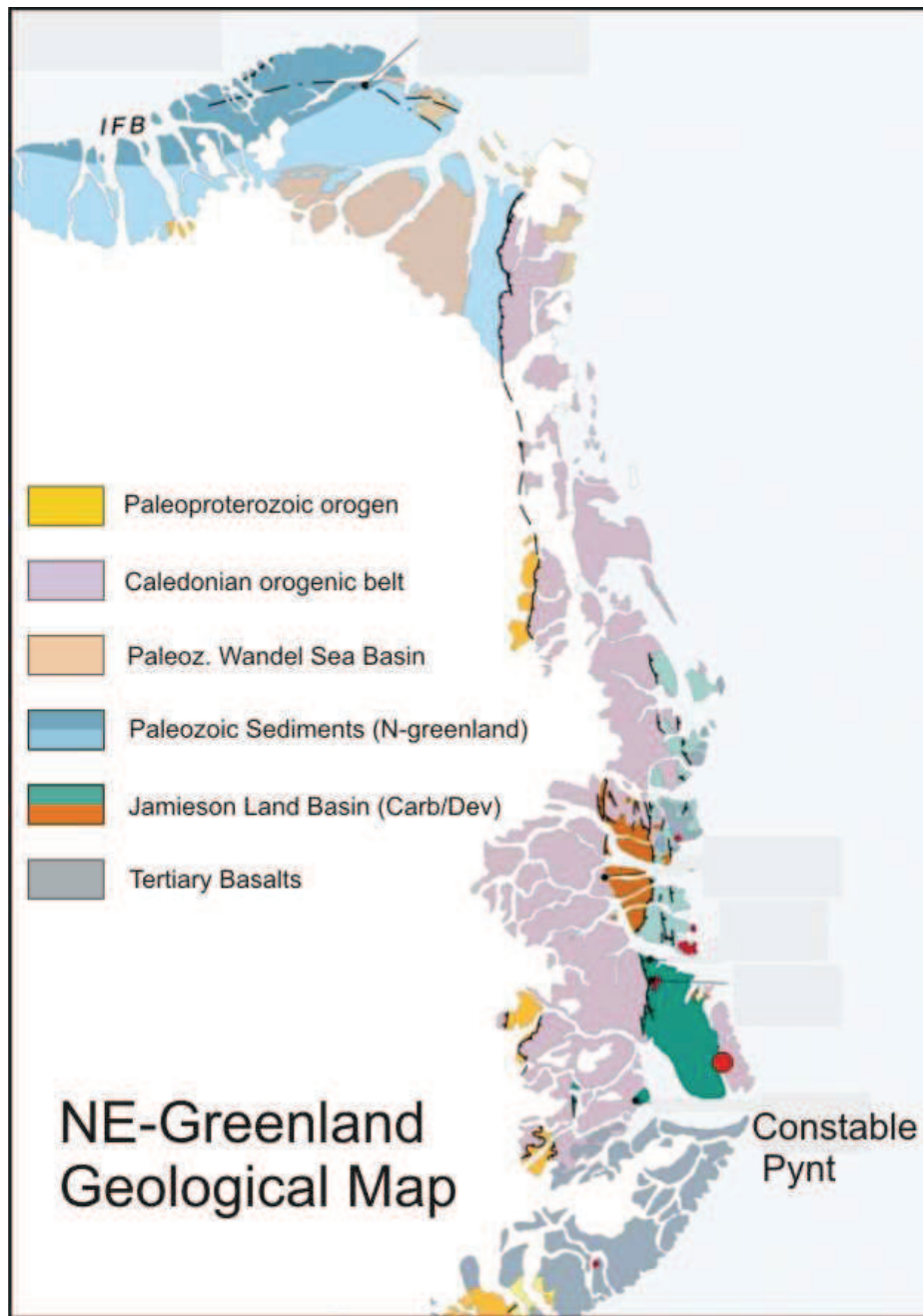


Fig. 4: Simplified geological map of northeastern Greenland showing the location of the Caledonian belt rocks (in light purple).