

## A Note on the Discovery of Two New Nunataks in Southernmost Heimefrontfjella

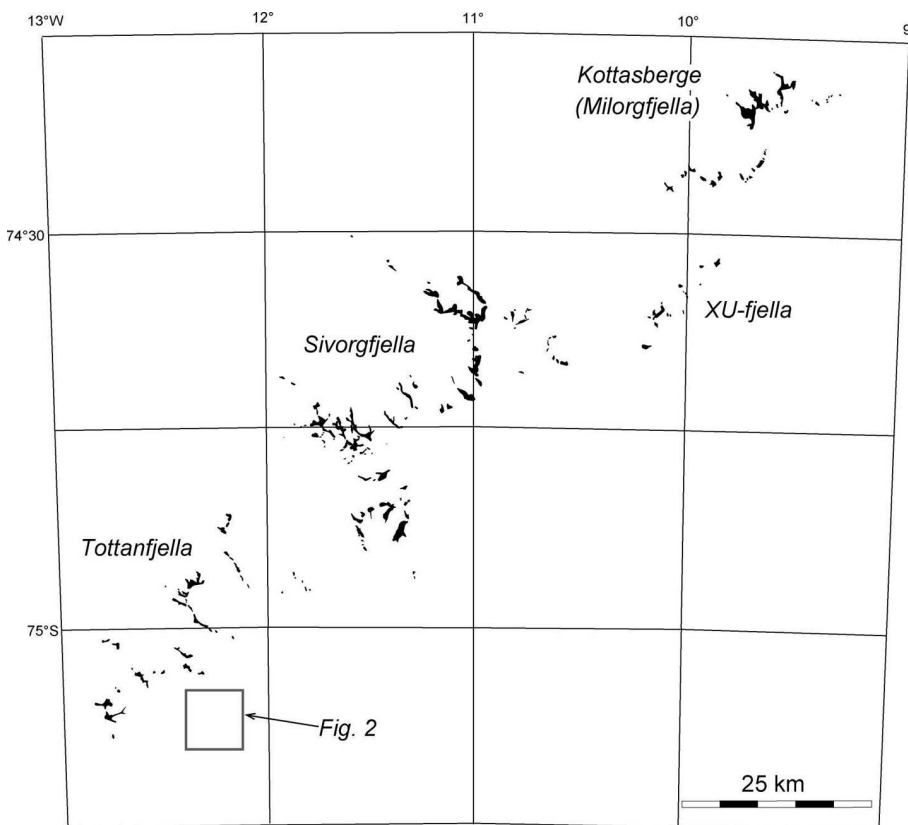
by Joachim Jacobs<sup>1</sup>, Gernot Patzelt<sup>2</sup>, Gerhard Spaeth<sup>3</sup> and Robert J. Thomas<sup>4</sup>

**Abstract:** Two new nunataks were discovered in southern Tottanfjella during our geological expedition to Heimefrontfjella in early 1994. The exposed rocks are typical for the Sivorg Terrane. One explanation that these rocks were not recorded earlier is that they were only relatively recently exposed due to ice retreat.

**Zusammenfassung:** Zwei neue Nunataks wurden im südlichen Tottanfjella während der geologischen Expedition in die Heimefrontfjella 1994 entdeckt. Die Gesteinsaufschlüsse sind typisch für das Sivorg Terrane. Eine Erklärung dafür, dass diese Gesteine nicht früher entdeckt wurden ist, dass sie erst kürzlich durch das sich zurückziehende Eis freigelegt wurden.

On Sunday 23<sup>rd</sup> January 1994 we discovered two new nunataks that were not recorded on any maps previously (Fig. 1). The two nunataks appear in the southern extension of Flissegga, Tottanfjella, separated by a number of N-S and E-W trending crevasse fields. Because these nunataks do not appear on the detailed geological maps they are dedicated this short note.

The northern outcrop (Weber-Rücken, official naming in progress, Fig. 2) is an approximately 300 m long ridge that hardly rises from the ice surface at an elevation of about 2140 m. It is mainly composed of metasedimentary rocks, including paragneisses, metapelites and hornblende-biotite gneiss. They are interbedded with coarse-grained porphyroblastic felsic gneiss and a two-mica augengneiss, probably representing meta-igneous rocks. The southern outcrop measures only 50 m across and is composed of a medium to coarse-grained metagranodiorite. These rocks are typical for the Sivorg Terrane, probably representing a Mesoproterozoic supracrustal sequence that is intruded by various igneous rocks. Most of the metamorphic rocks have a well-developed foliation and lineation and show folding on NE trending fold axes. The foliation planes dip steeply towards the NW or, more commonly, moderately to the SE. Lineation and fold axes



**Fig. 1:** Overview map of recorded exposures in Heimefrontfjella, according to provisional topographic maps (Federal Office for Cartography and Geodesy, Frankfurt). The newly discovered outcrops are located in southernmost Tottanfjella.

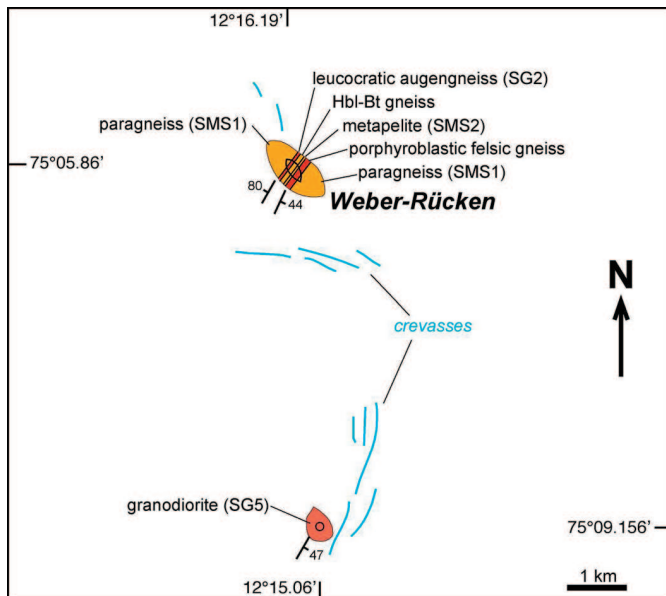
**Abb. 1:** Übersichtskarte der bisher von der Heimefrontfjella bekannten Aufschlüsse, nach provisorischen topographischen Karten des Bundesamt für Kartographie und Geodäsie, Frankfurt.

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plunge with 10-30° to the NE. The southern locality forms the southernmost outcrop in Heimefrontfjella at 75°09.156' S and 12°15.06' W. No satisfactory photographs were taken at these outcrops due to poor weather conditions at the day of visit.

The question arises why these nunataks were not recorded previously? One possibility is that they were overlooked because of their southern position in the mountain range. An alternative explanation would be that they were only recently exposed due to ice retreat. In this respect, these nunataks might be interesting for further studies, such as cosmogenic isotope dating.

**Fig. 2:** Simplified geological map of the newly discovered nunataks in southernmost Tottanfjella. The size of the outcrops is exaggerated in order to represent the geology better (overview see Fig. 1).

**Abb. 2:** Vereinfachte geologische Karte der neu entdeckten Nunataks im südlichen Tottanfjella. Die Aufschlüsse wurden vergrößert dargestellt, um die Geologie besser präsentieren zu können (Übersicht siehe Abb. 1).