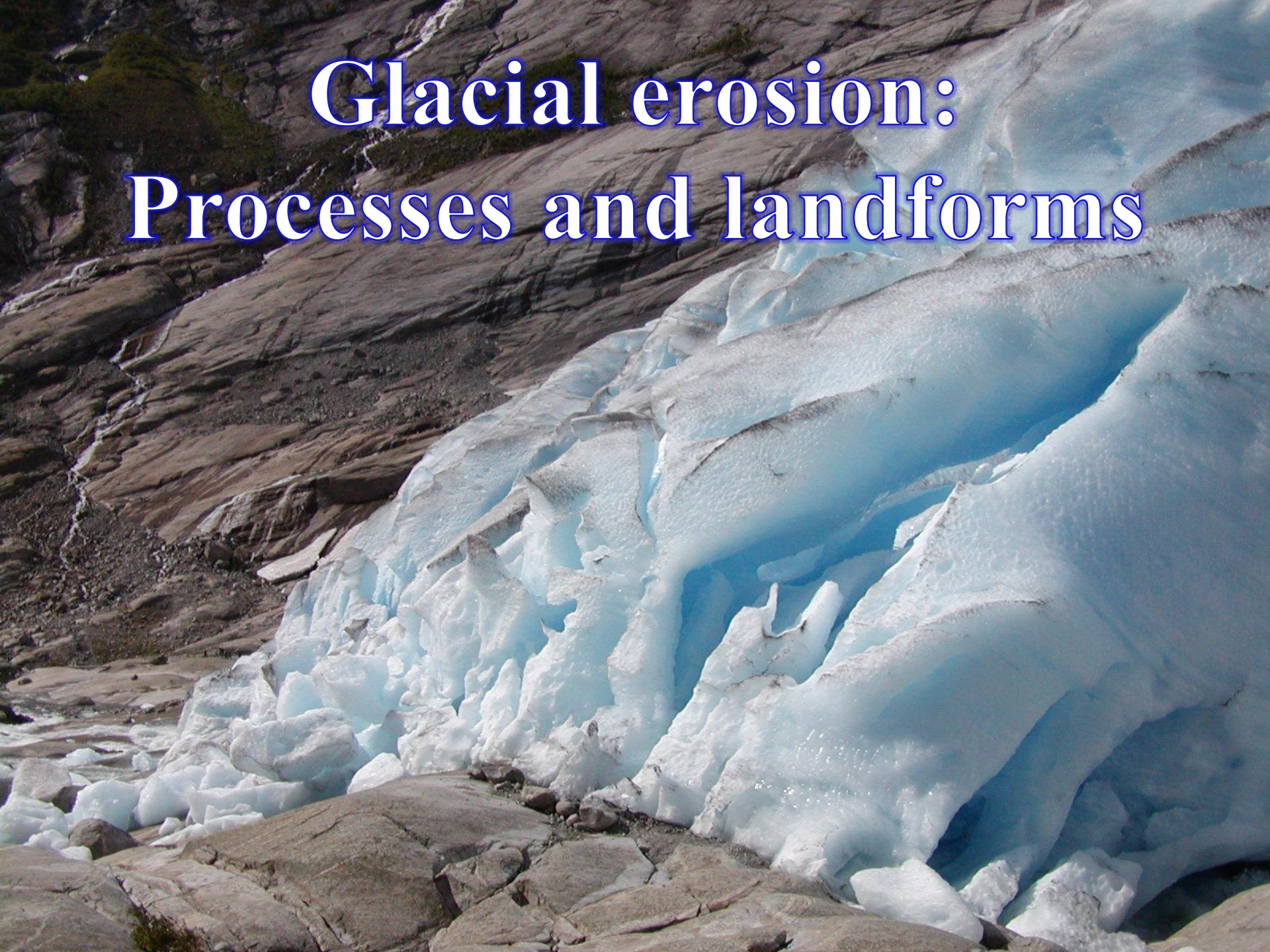
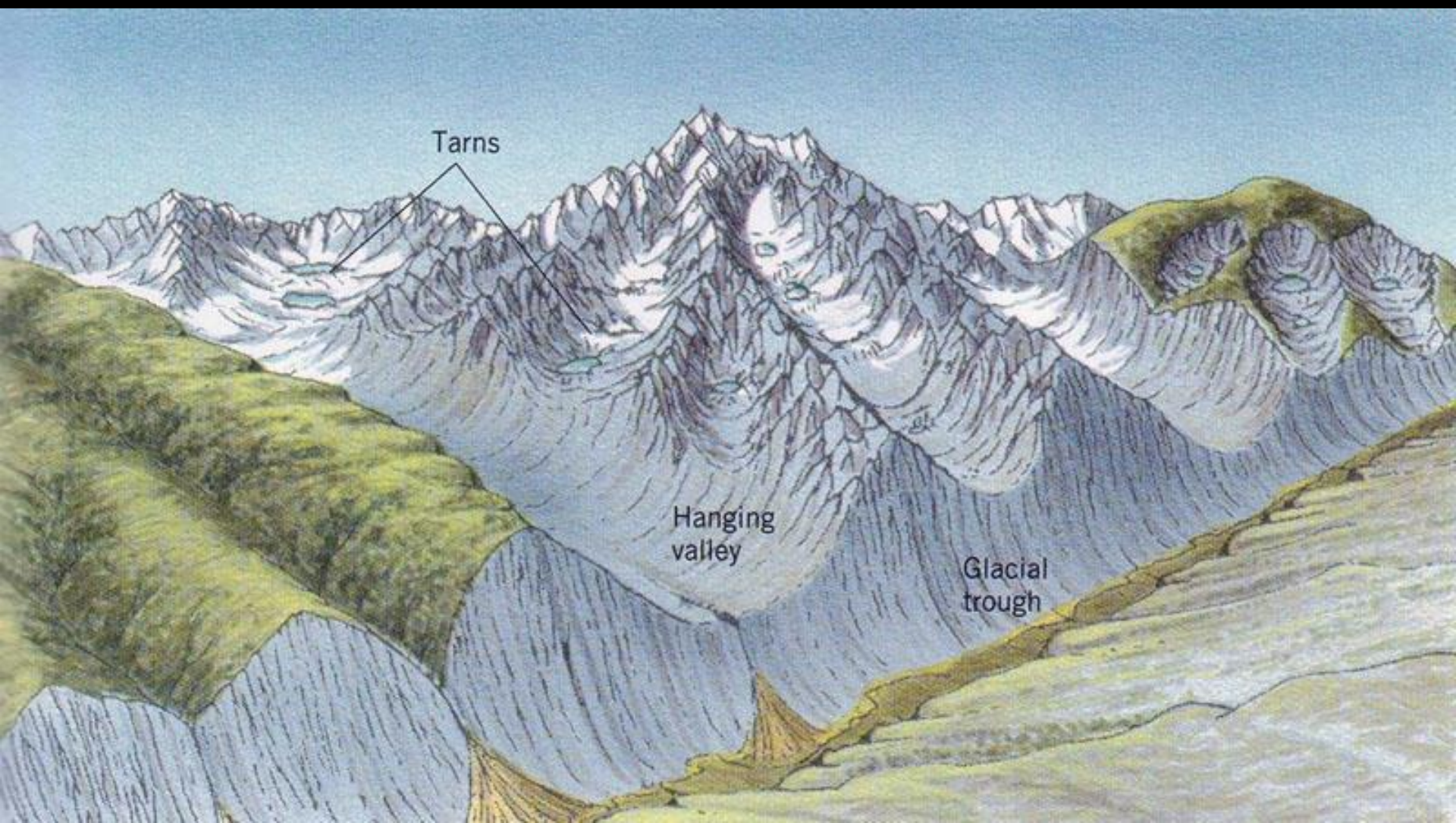


Glacial erosion: Processes and landforms



Glacial erosion: Processes and landforms

- 1: Thermal controls on glacial erosion**
- 2: Mass balance controls on glacial erosion**
- 3: Basic erosional processes and landforms**



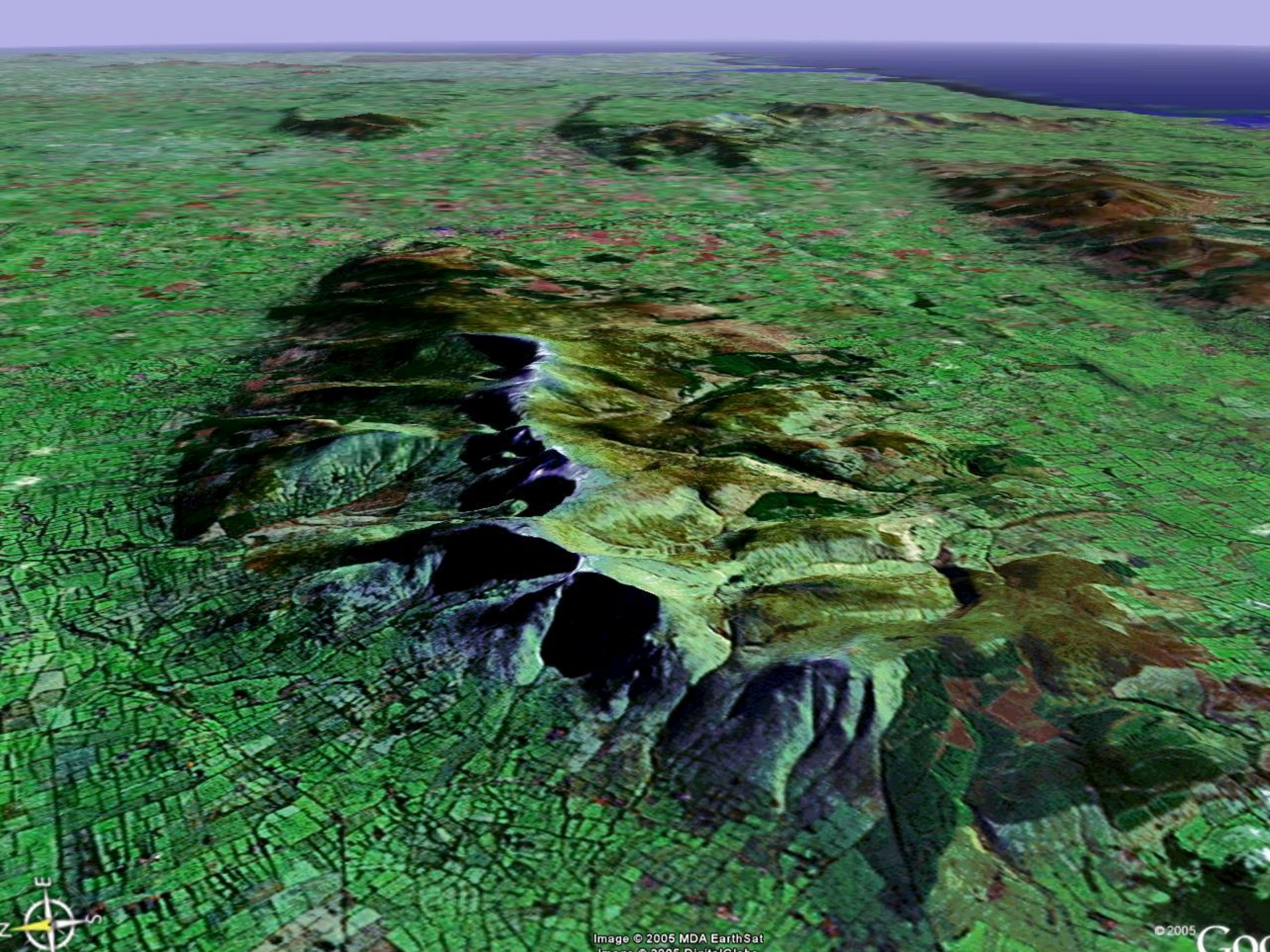
Tarns

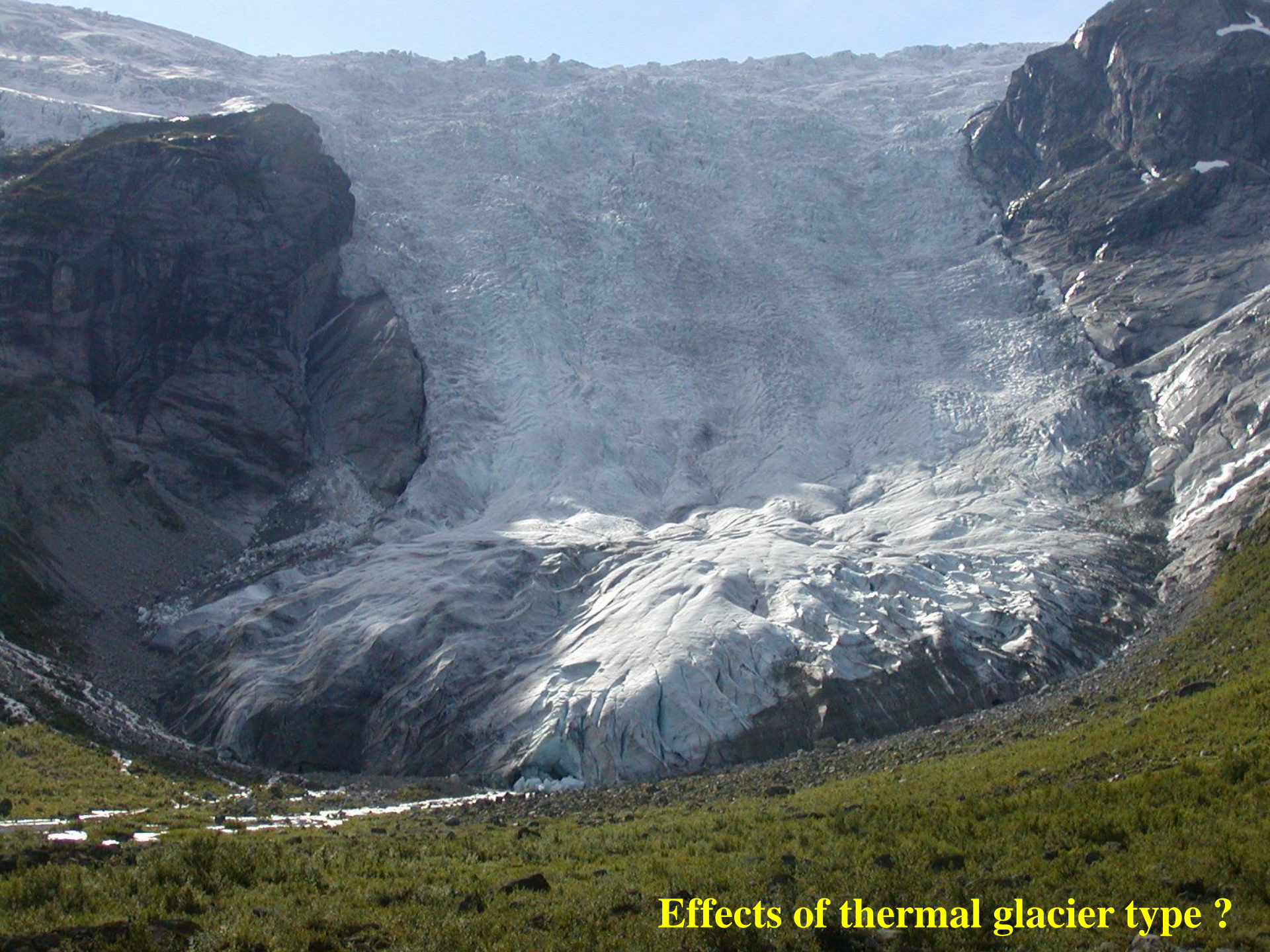
Hanging valley

Glacial trough



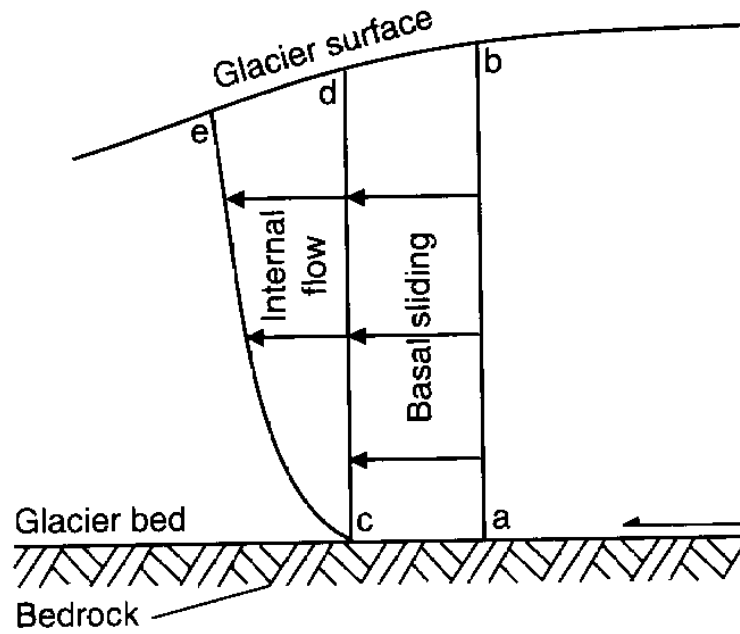




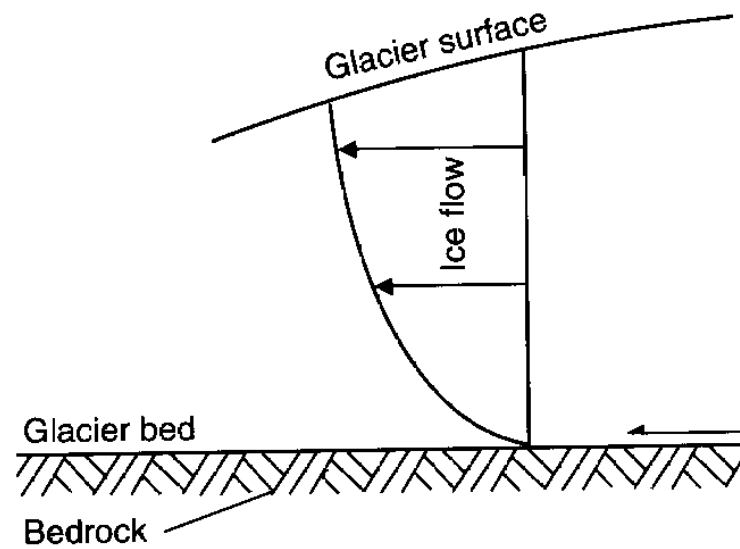


Effects of thermal glacier type ?

A Warm-based glacier resting on bedrock



B Cold-based glacier resting on bedrock





Supraglacial and subglacial meltwater channels ?



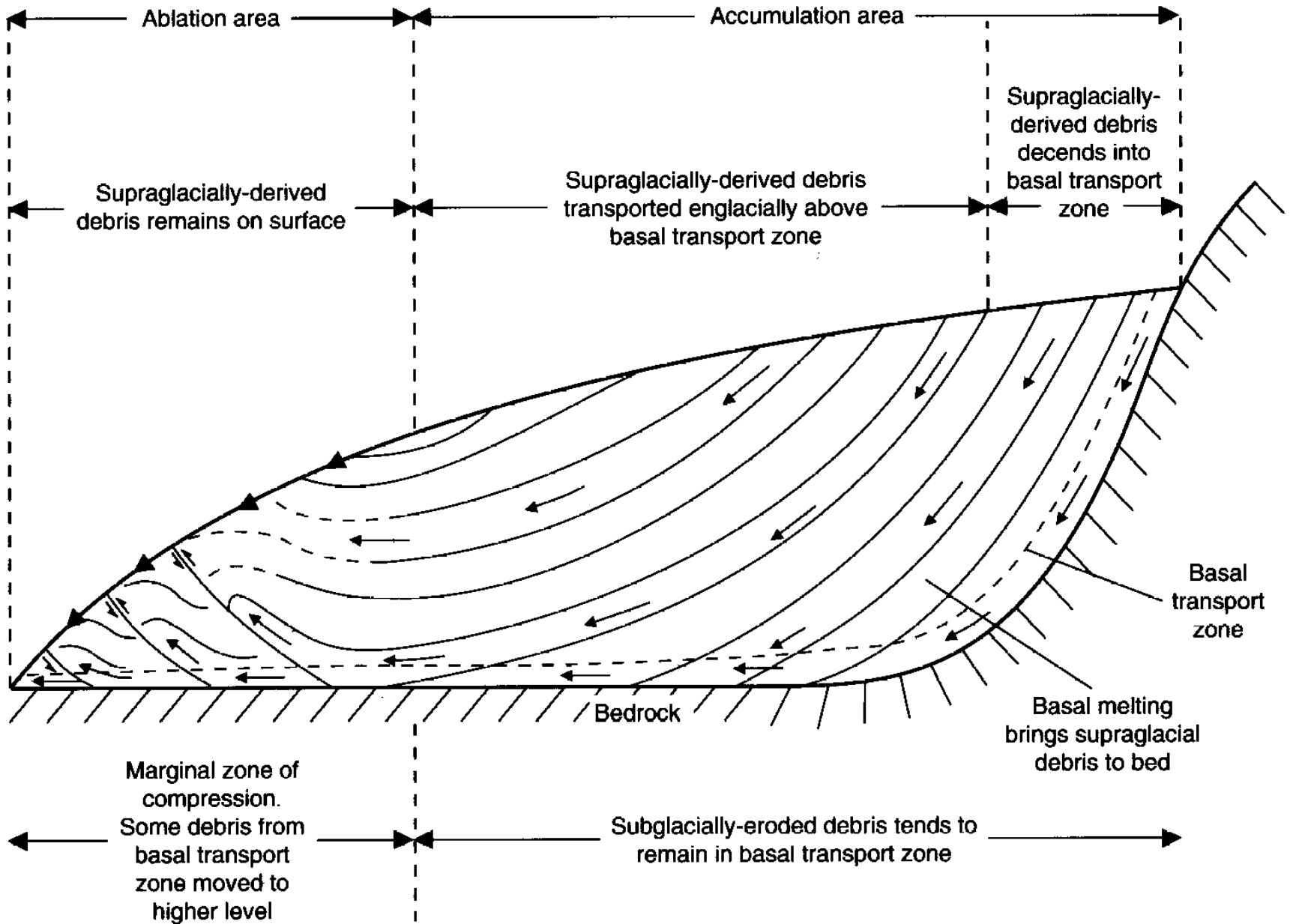








Controls on glacier temperatures ?



Air temperature, precipitation, flow velocity, geothermal heat flow

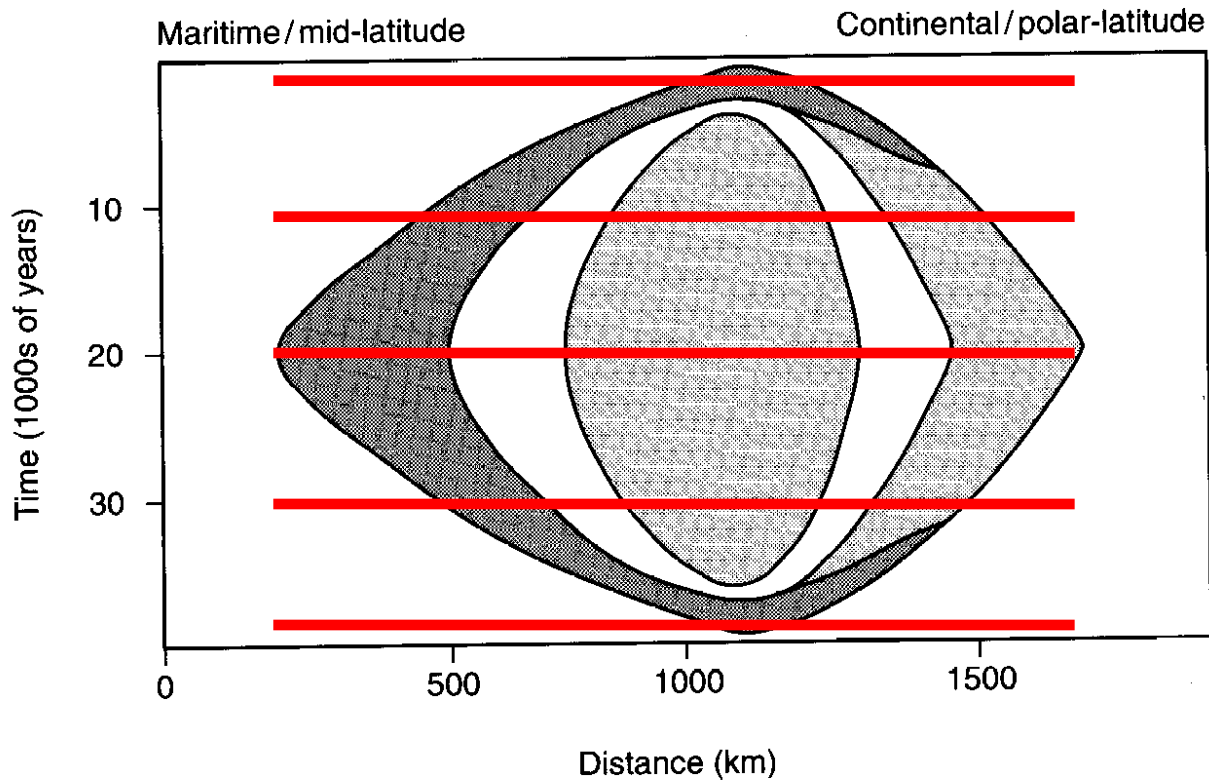





Flow velocity and crevasses



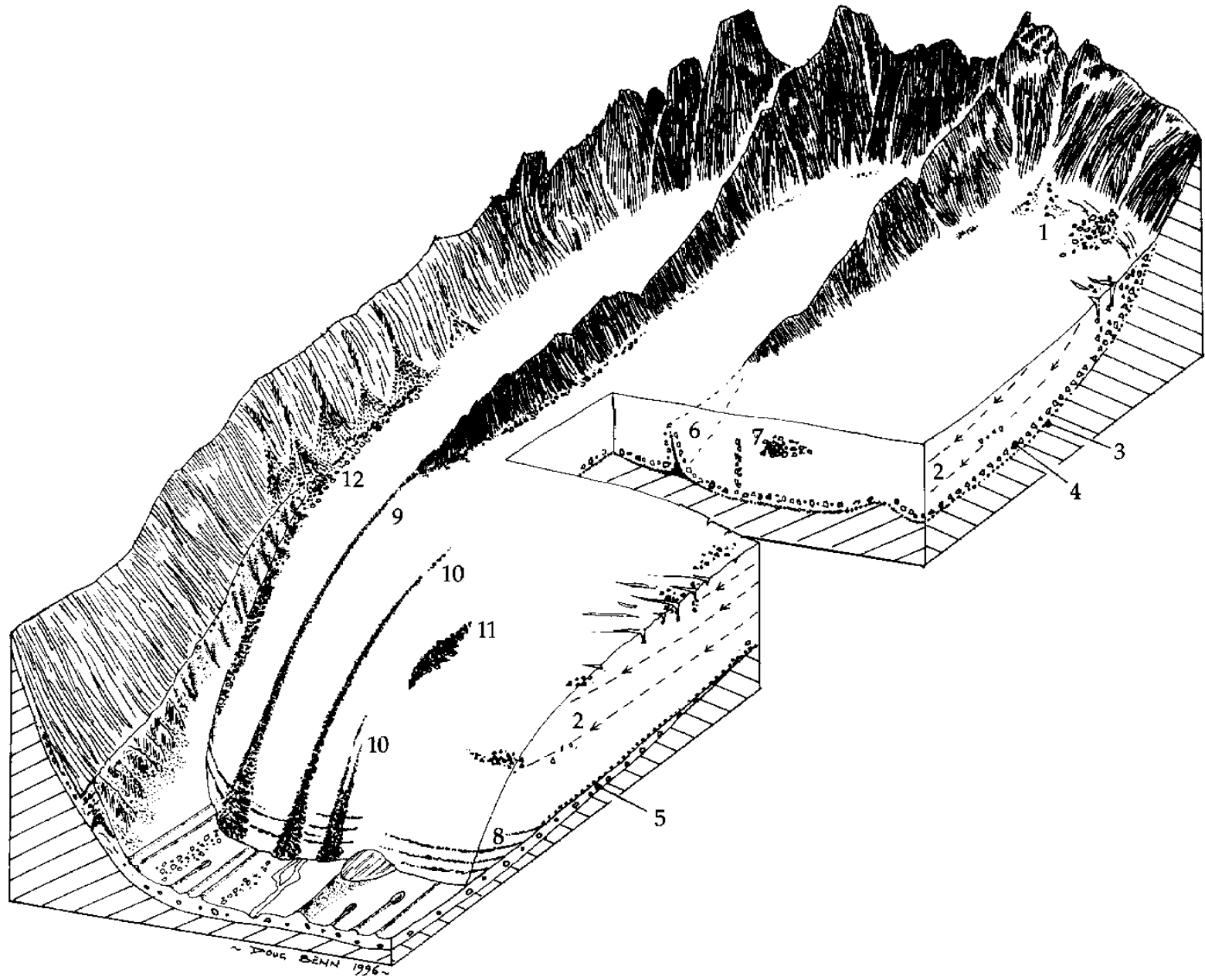
Courtesy USGS

Highest velocity near ELA



-  Condition A, warm ice
-  Condition B, thermal equilibrium
-  Condition C, cold ice

Changes over time ?

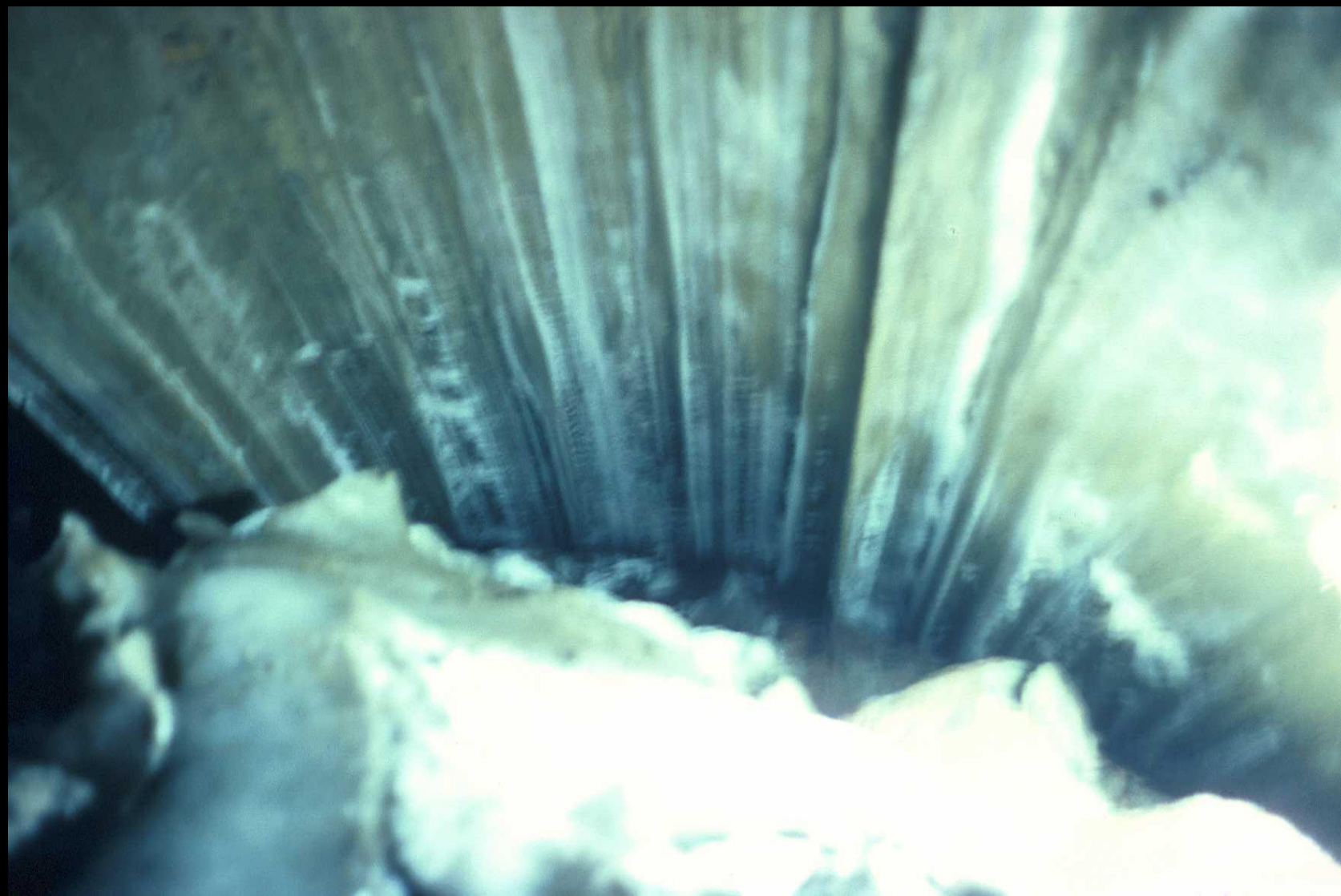


Basic erosional processes

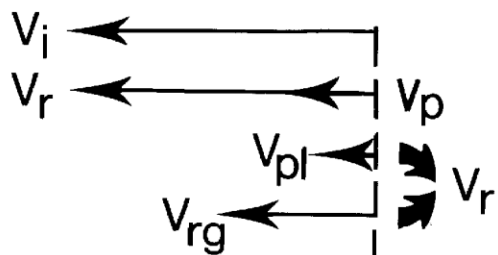
Basal sliding



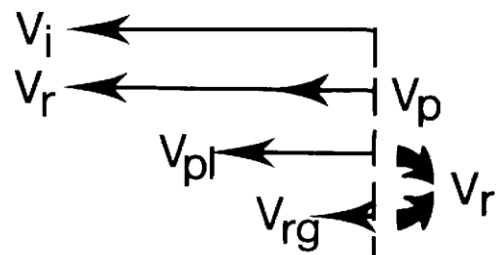




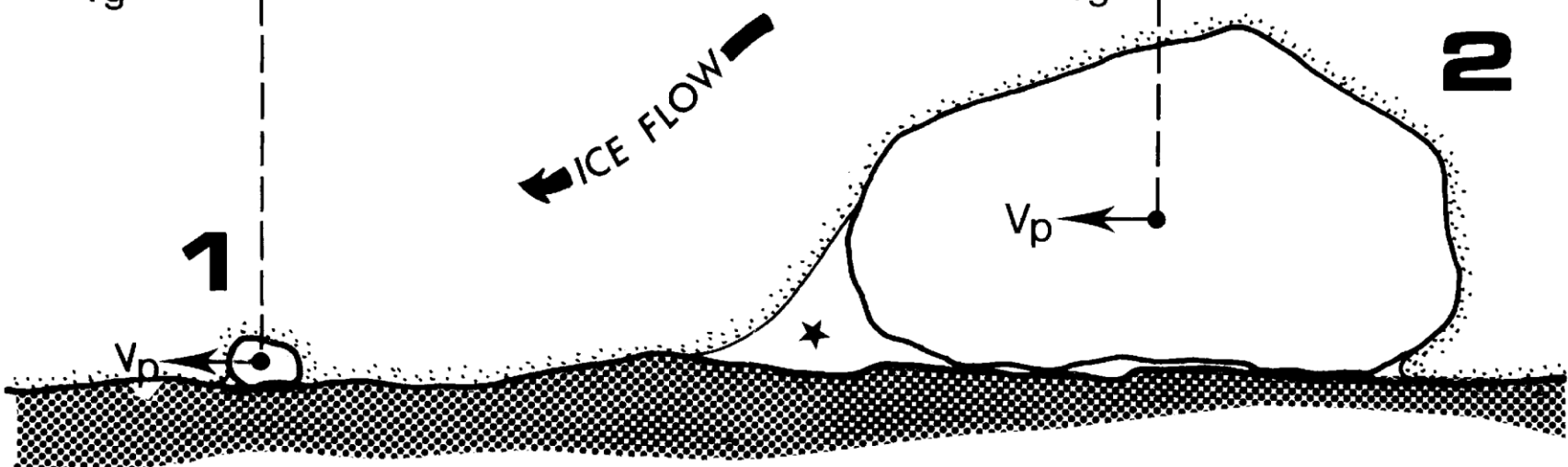




ICE FLOW



2



Basal debris concentration



Bedrock hardness

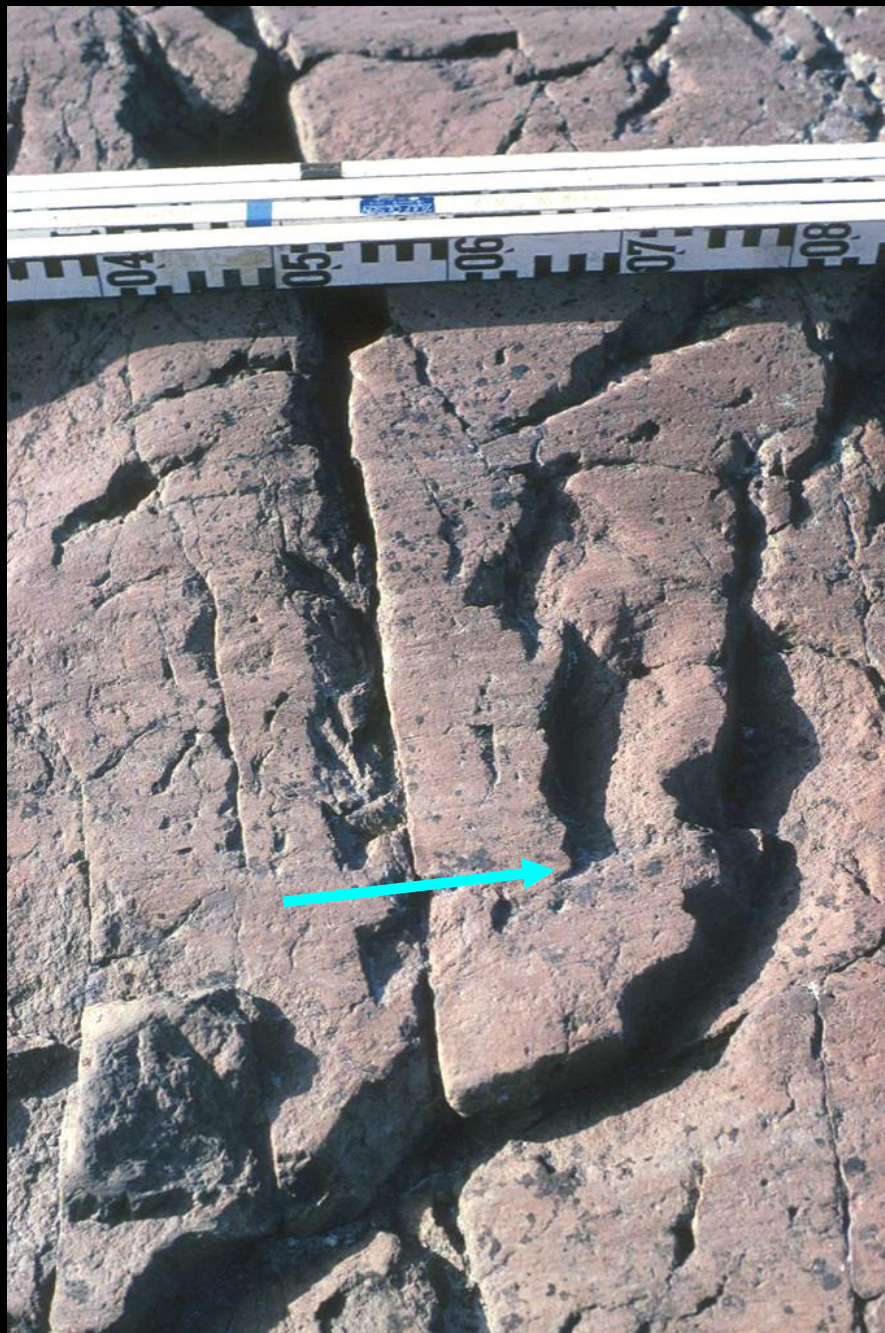




Bedrock structures







Chatter marks

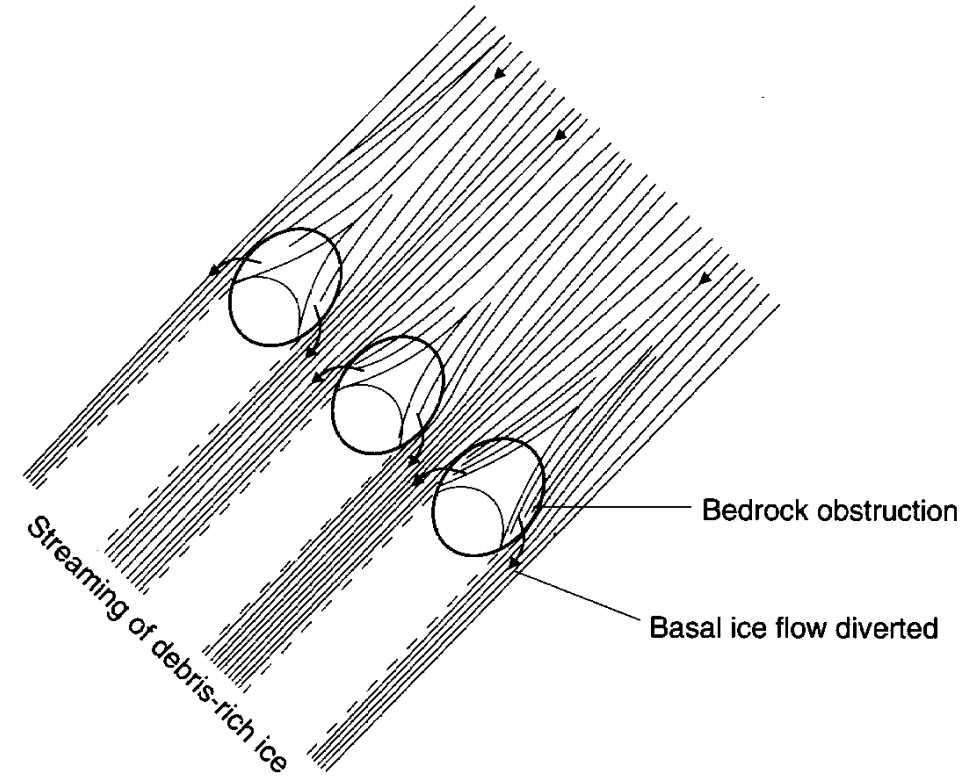
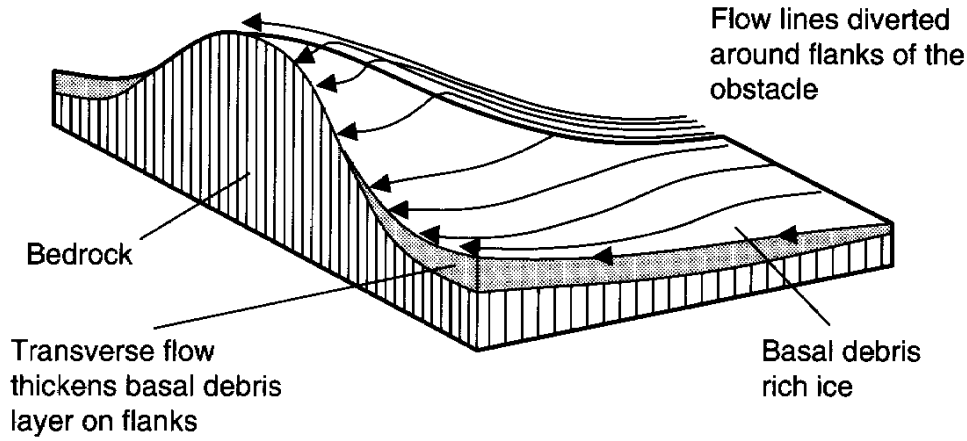


Crescentic gouge





Basal debris streaming





Sichelwannen







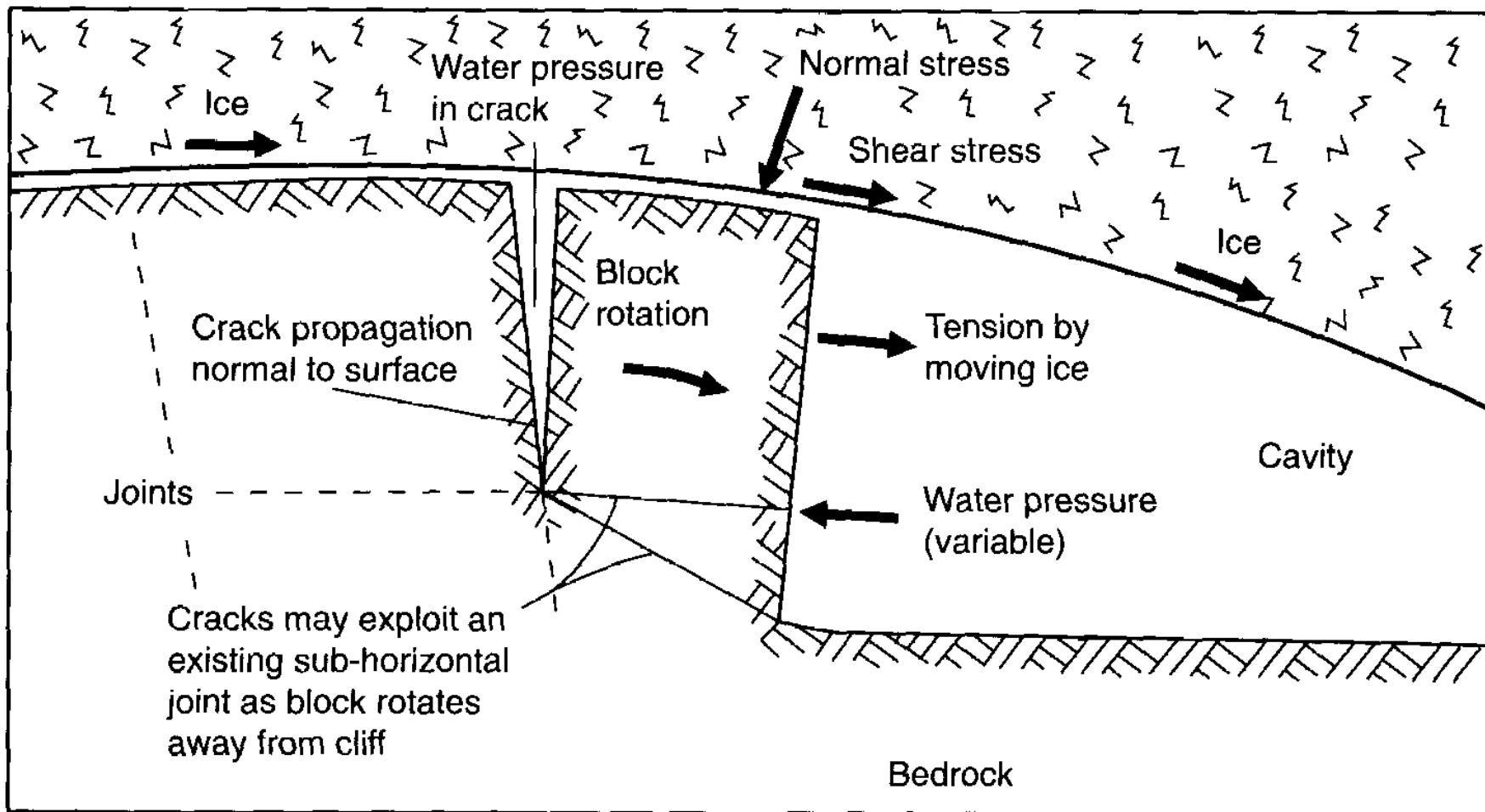
Roches moutonne's



Lodgement boulder









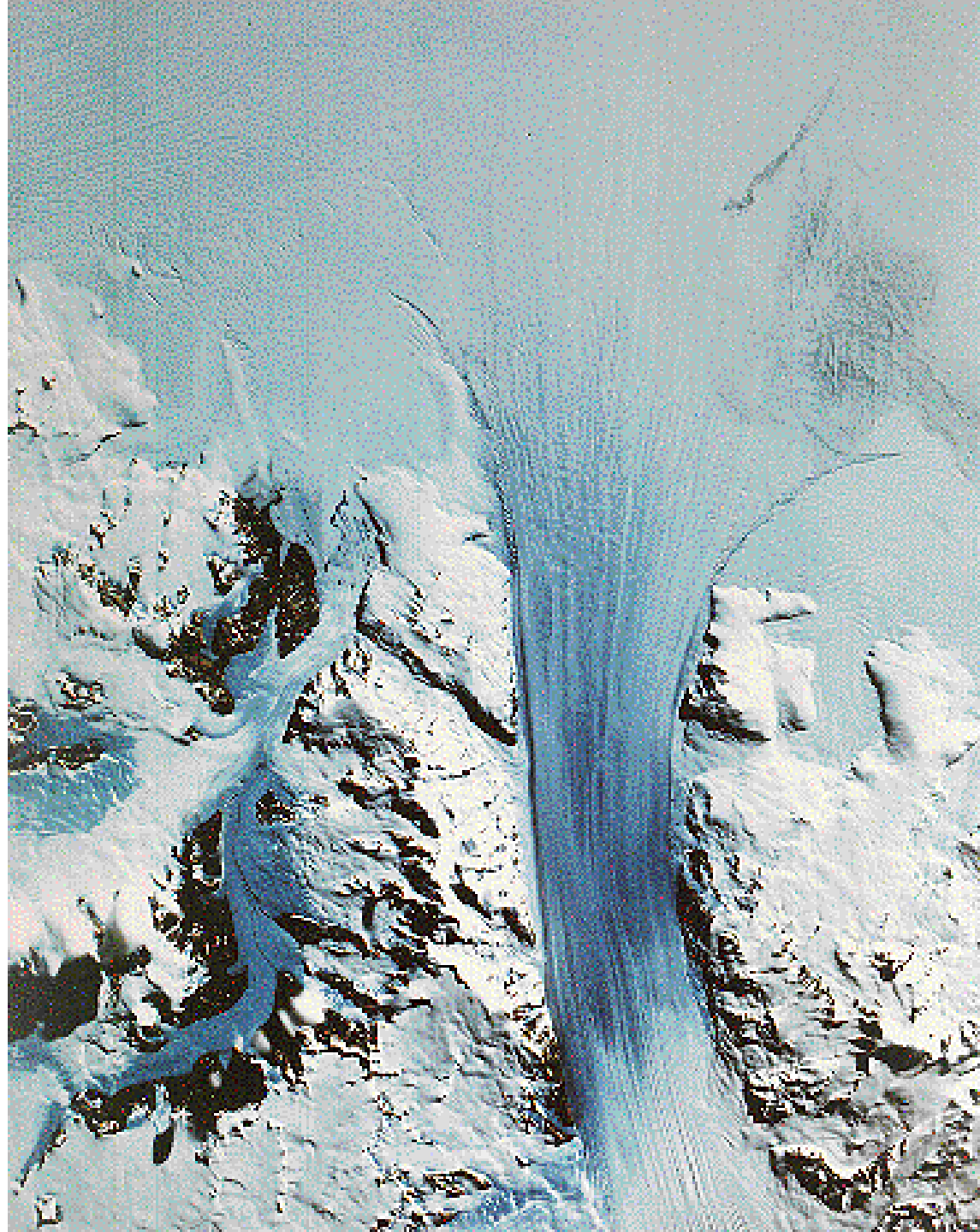


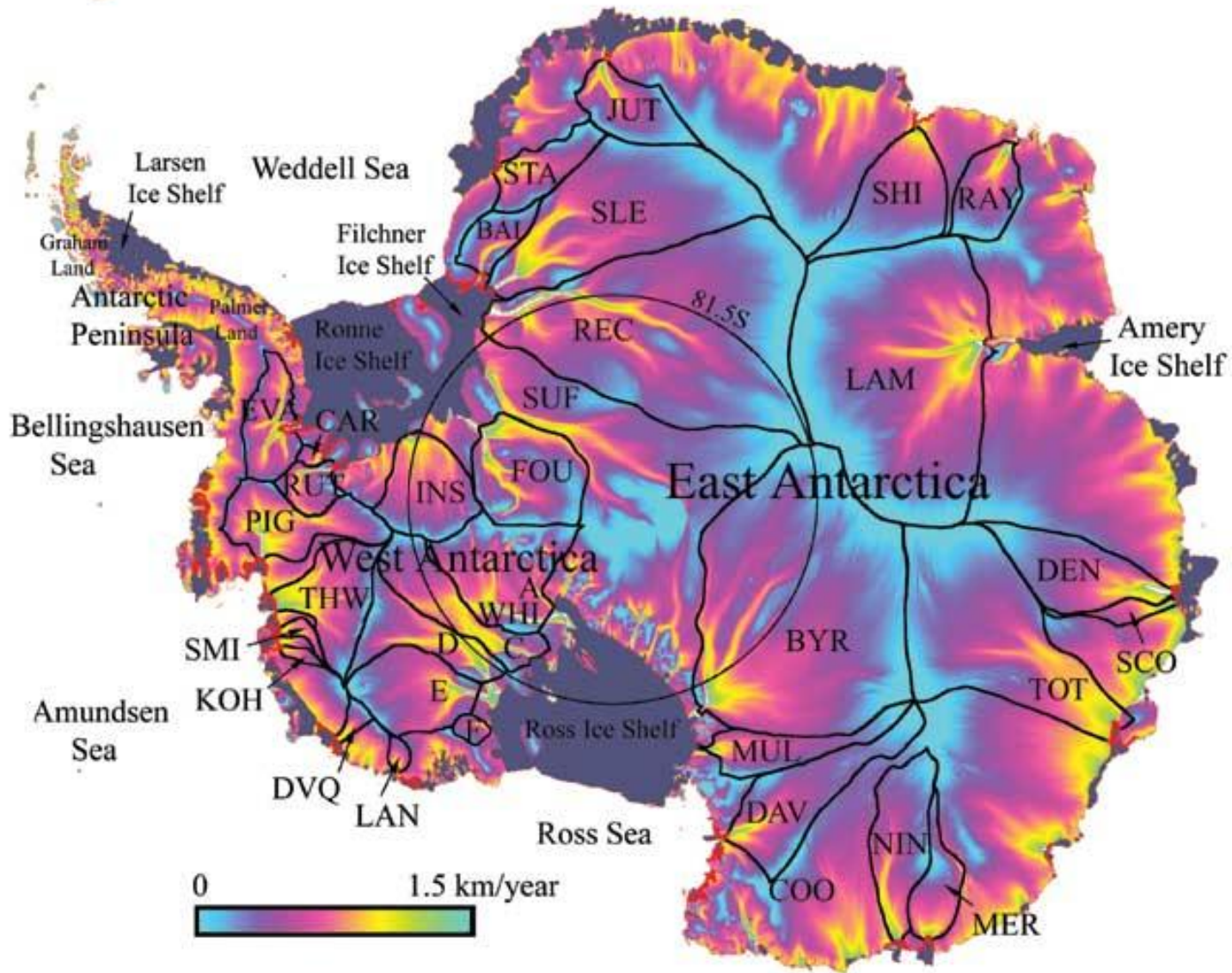


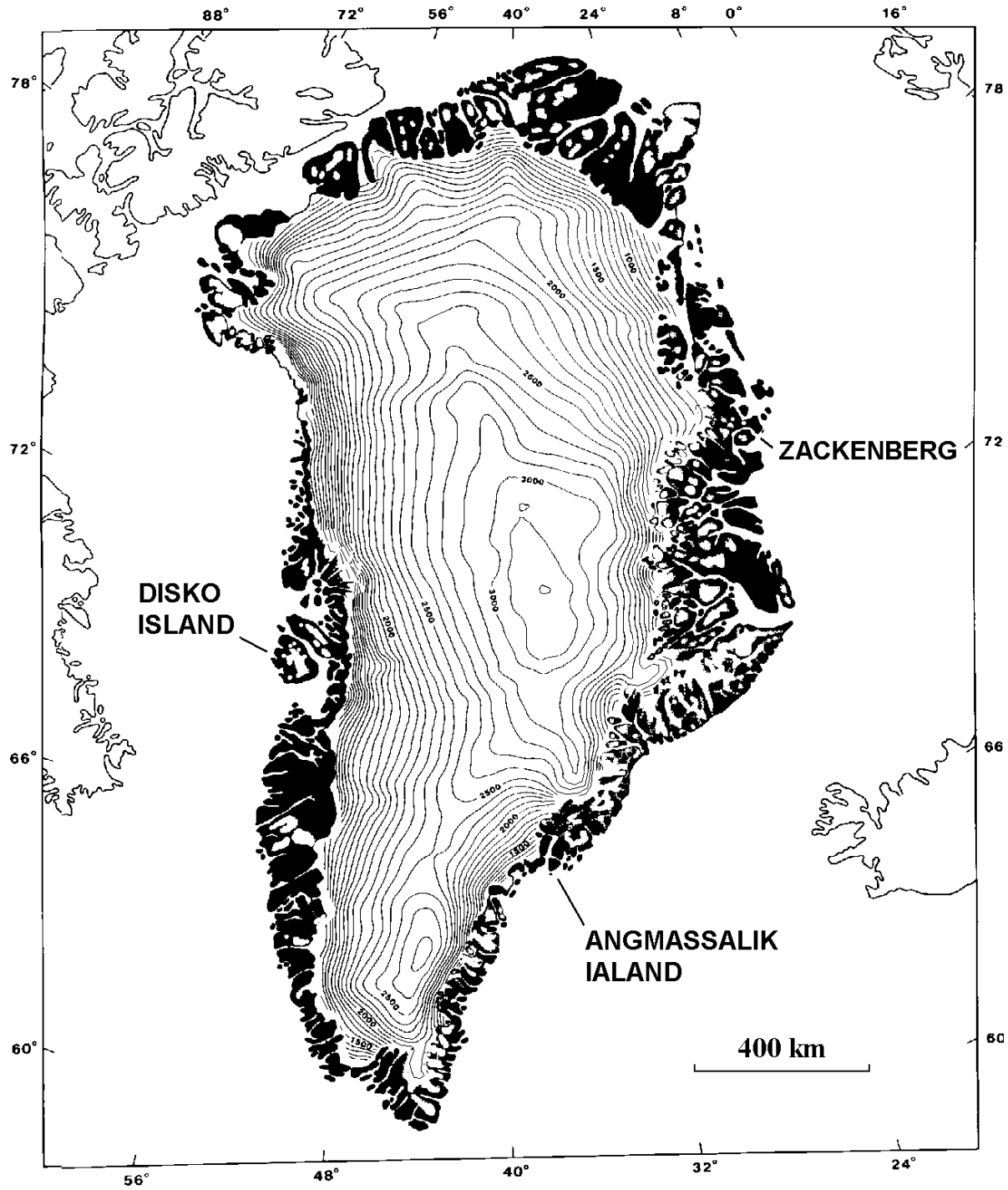


Fast flowing glaciers

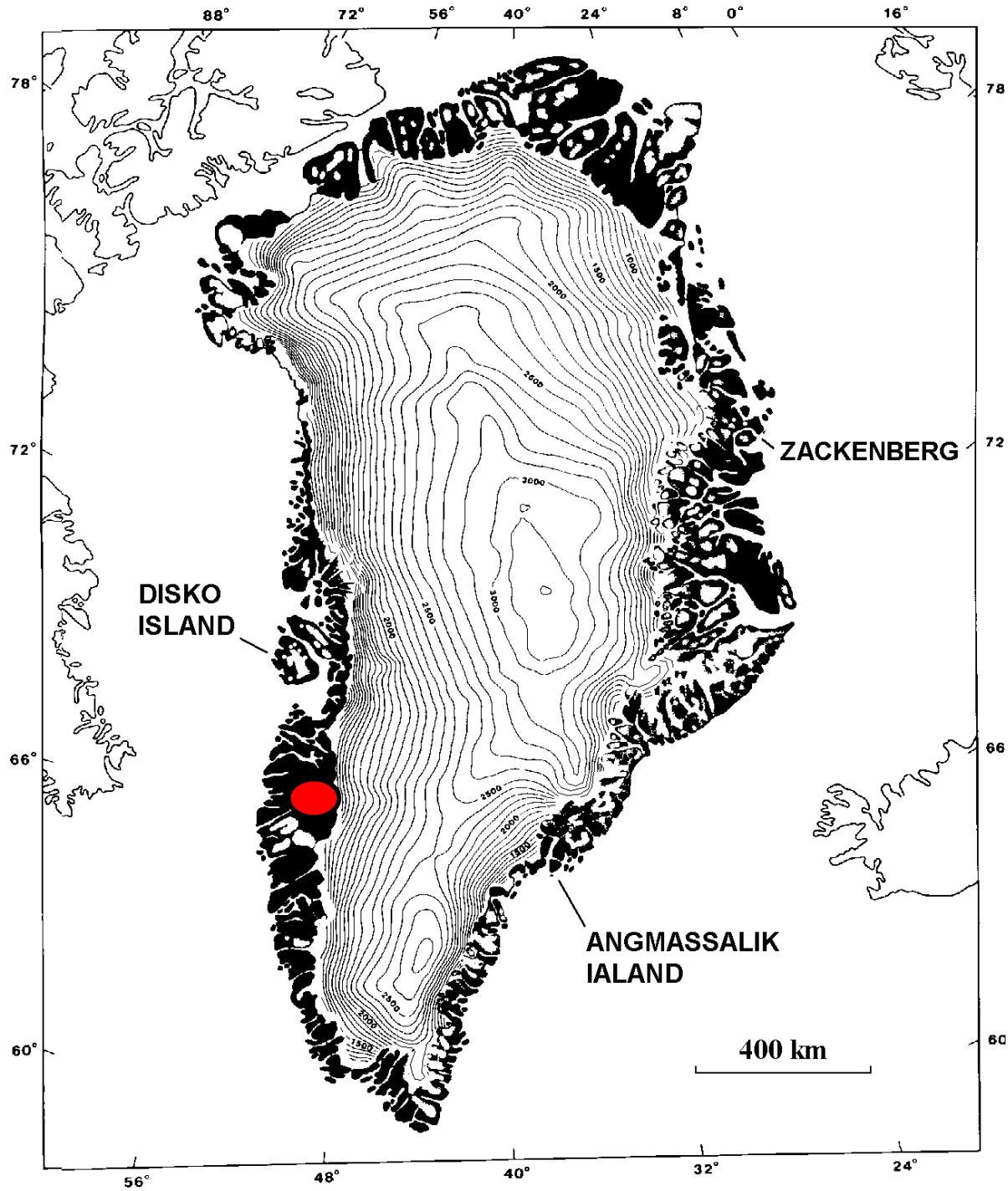
Bird Icestream joins
the Ross Ice Shelf







P-forms: Glacial erosion
and the interaction with subglacial water?





























Landscapes with evidence of large-scale glacial erosional phenomena







Oslo



A theoretical approach to glacier equilibrium-line altitudes using meteorological data and glacier mass-balance records from southern Norway

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Permafrost Periglac. Process. **12**: 255–266 (2001)
DOI: 10.1002/ppp.390



Physical Modelling of Bedrock Brecciation by Ice Segregation in Permafrost

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ABSTRACT