

Glacial erosion

A photograph showing a large glacier flowing over a rocky mountain slope. The glacier is a mix of white and light blue ice, with visible crevasses and a jagged, broken surface. The surrounding rock is dark and layered, showing signs of erosion. The sky is a clear, pale blue.

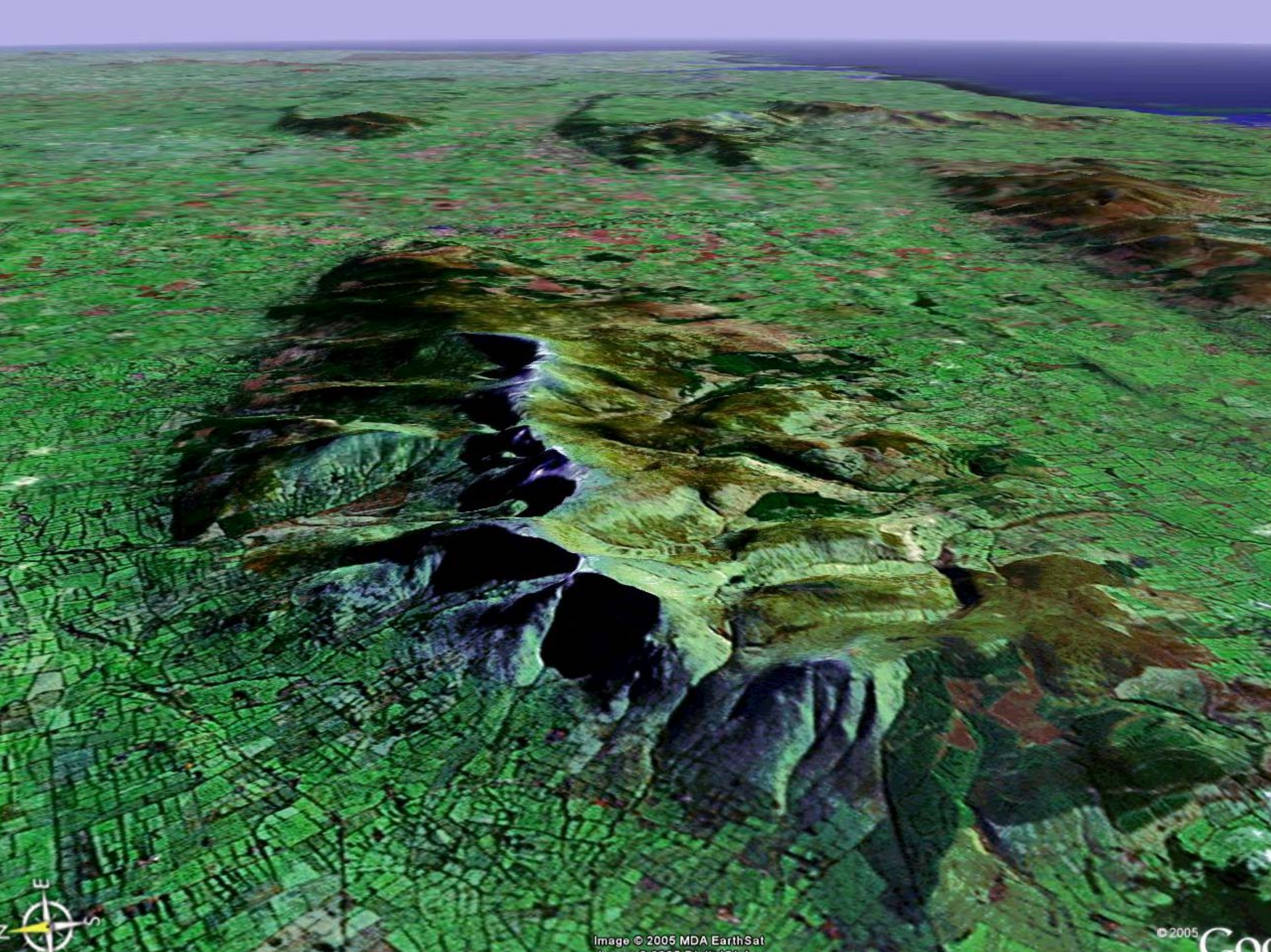
Processes

Glacial erosion

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





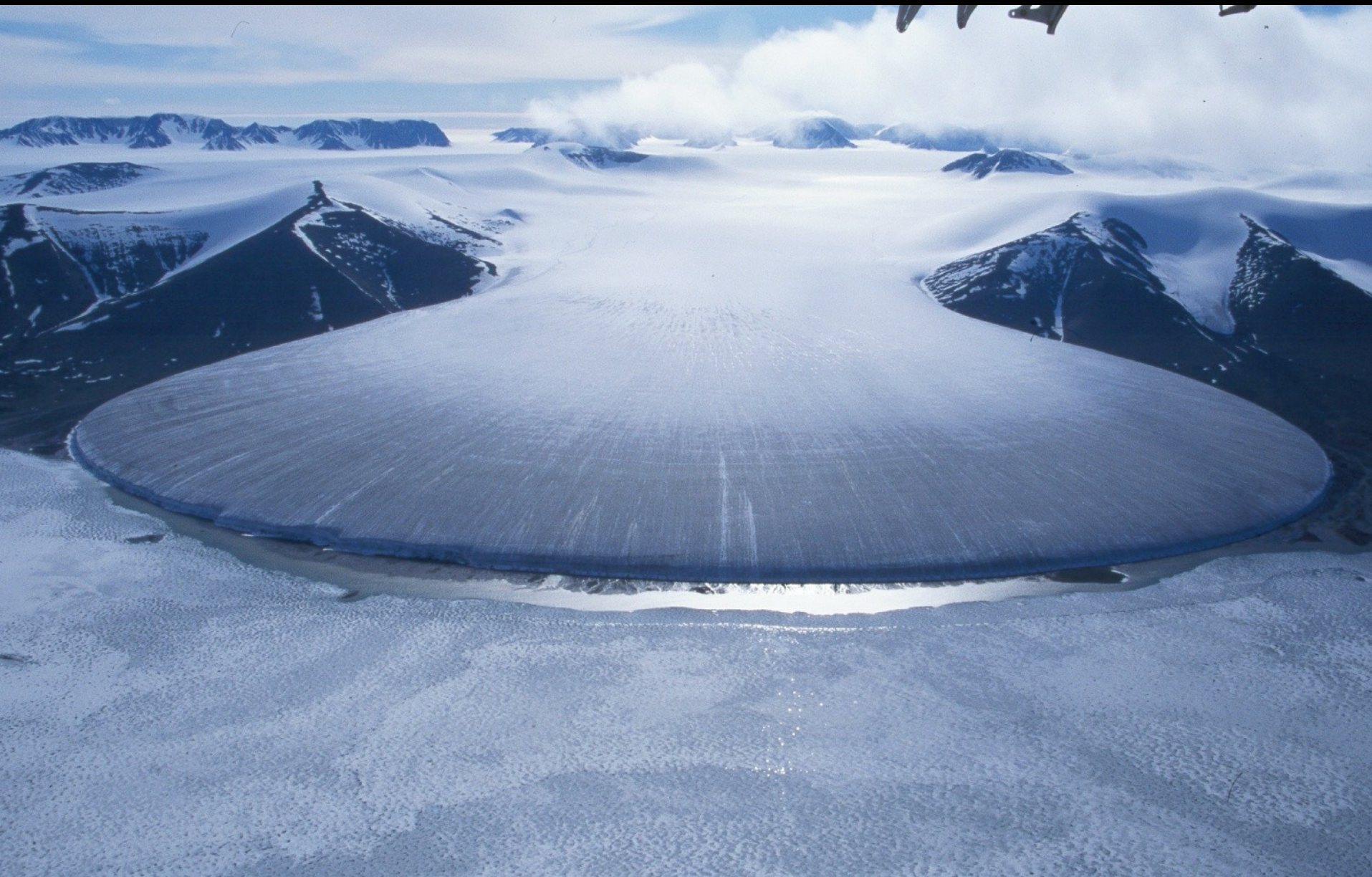




Thermal glacier type

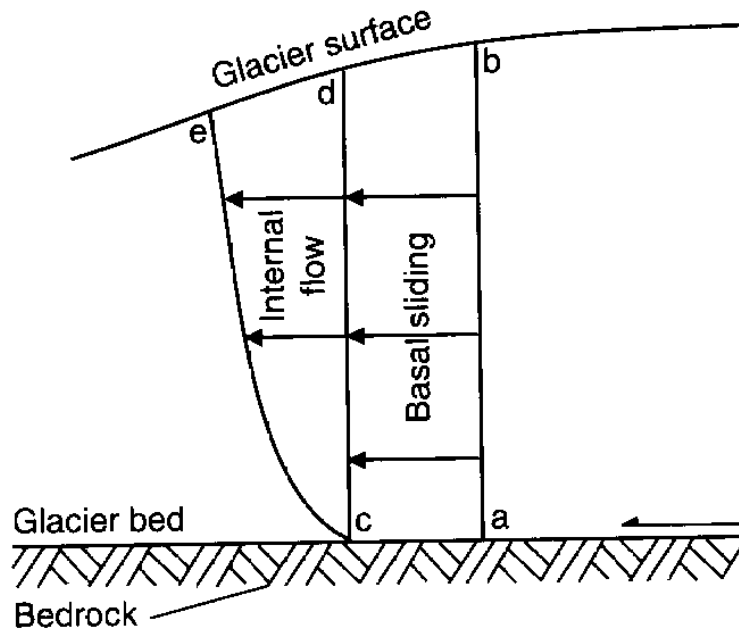




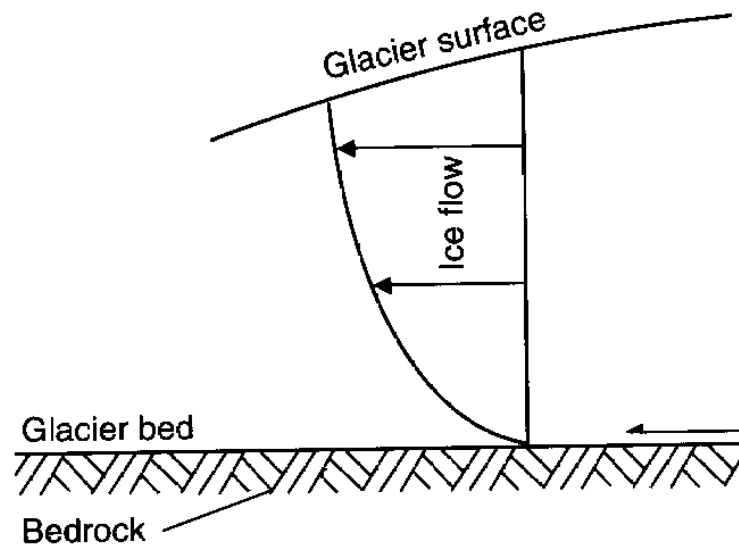




A Warm-based glacier resting on bedrock

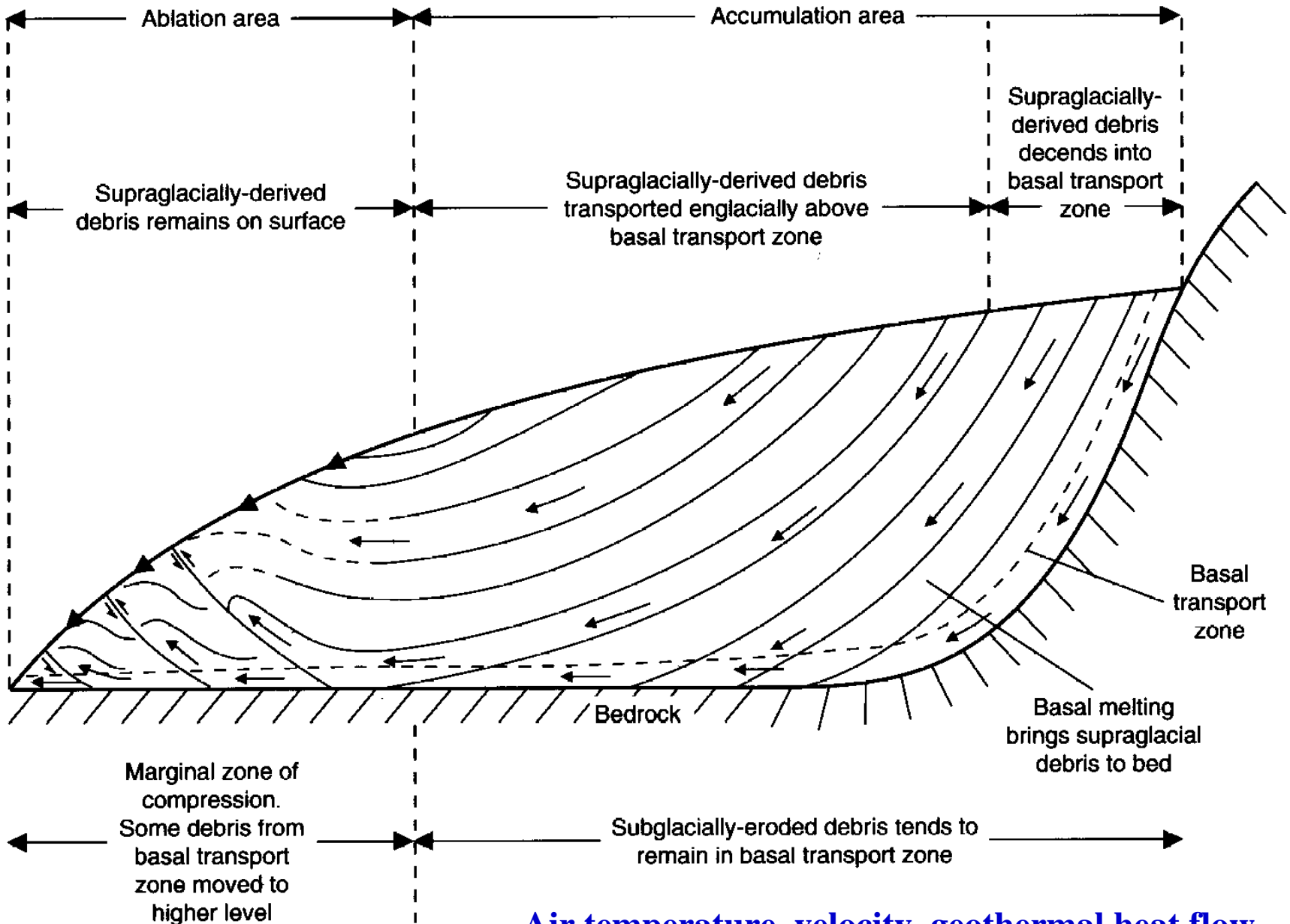


B Cold-based glacier resting on bedrock





Controls on glacier temperatures ?



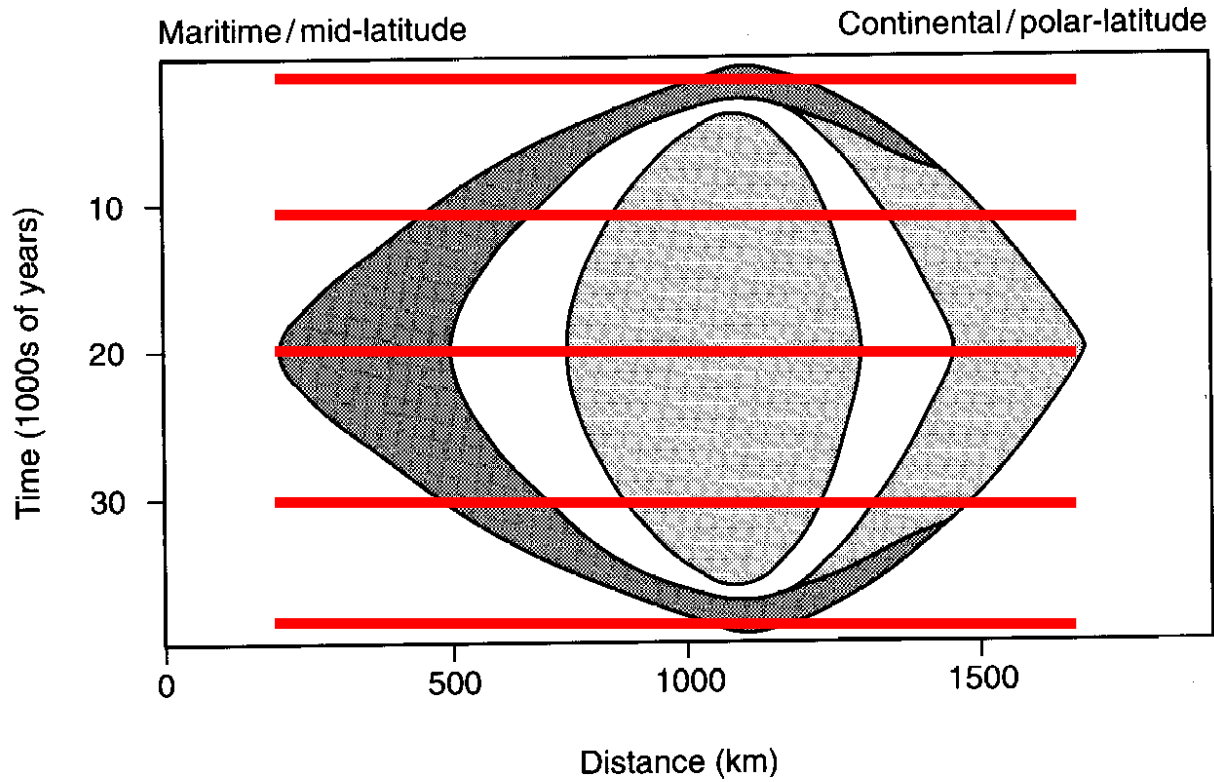
Air temperature, velocity, geothermal heat flow



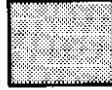


Flow velocity

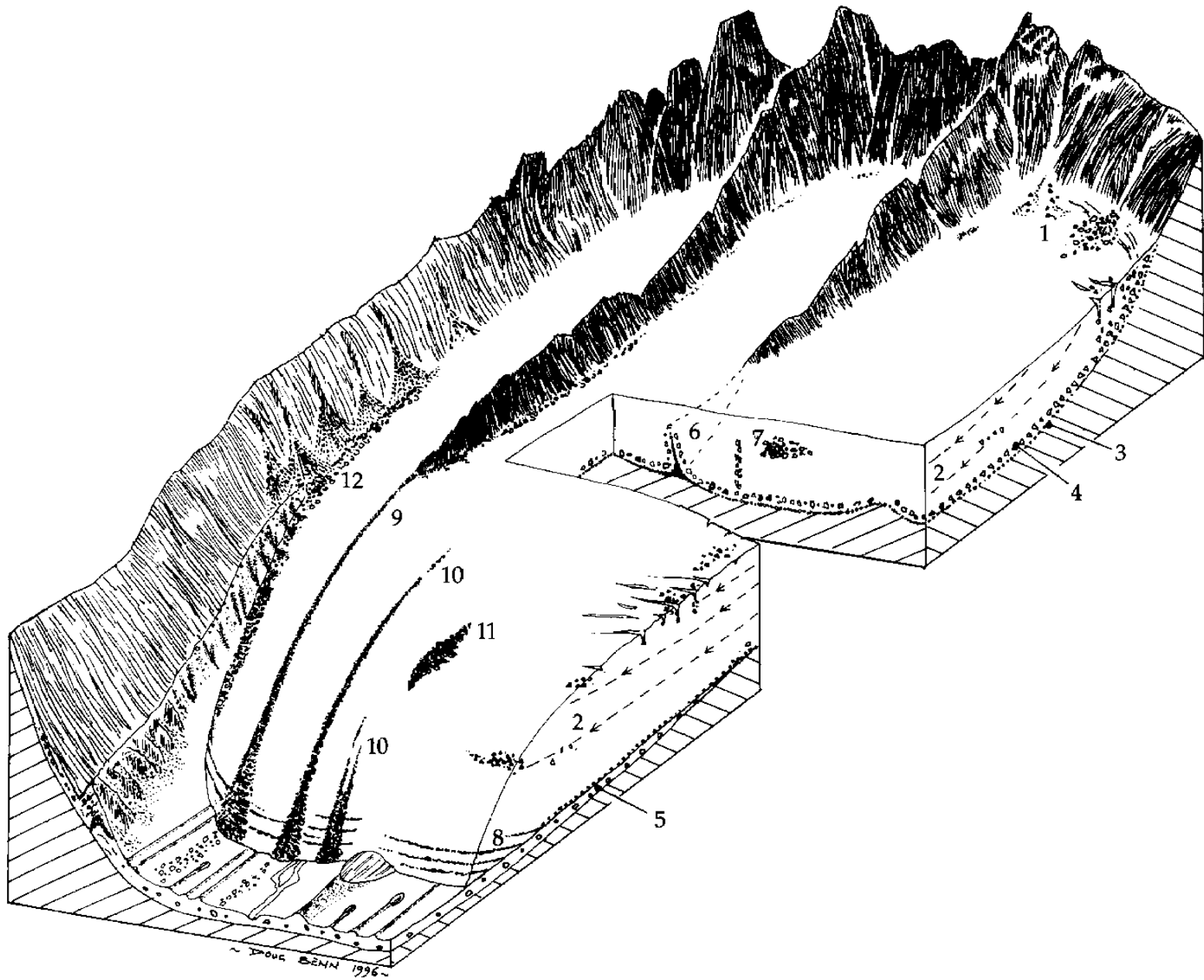


Courtesy USGS



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

Changes through time



Basic erosional processes

Basal sliding









Basal debris concentration



Rock hardness

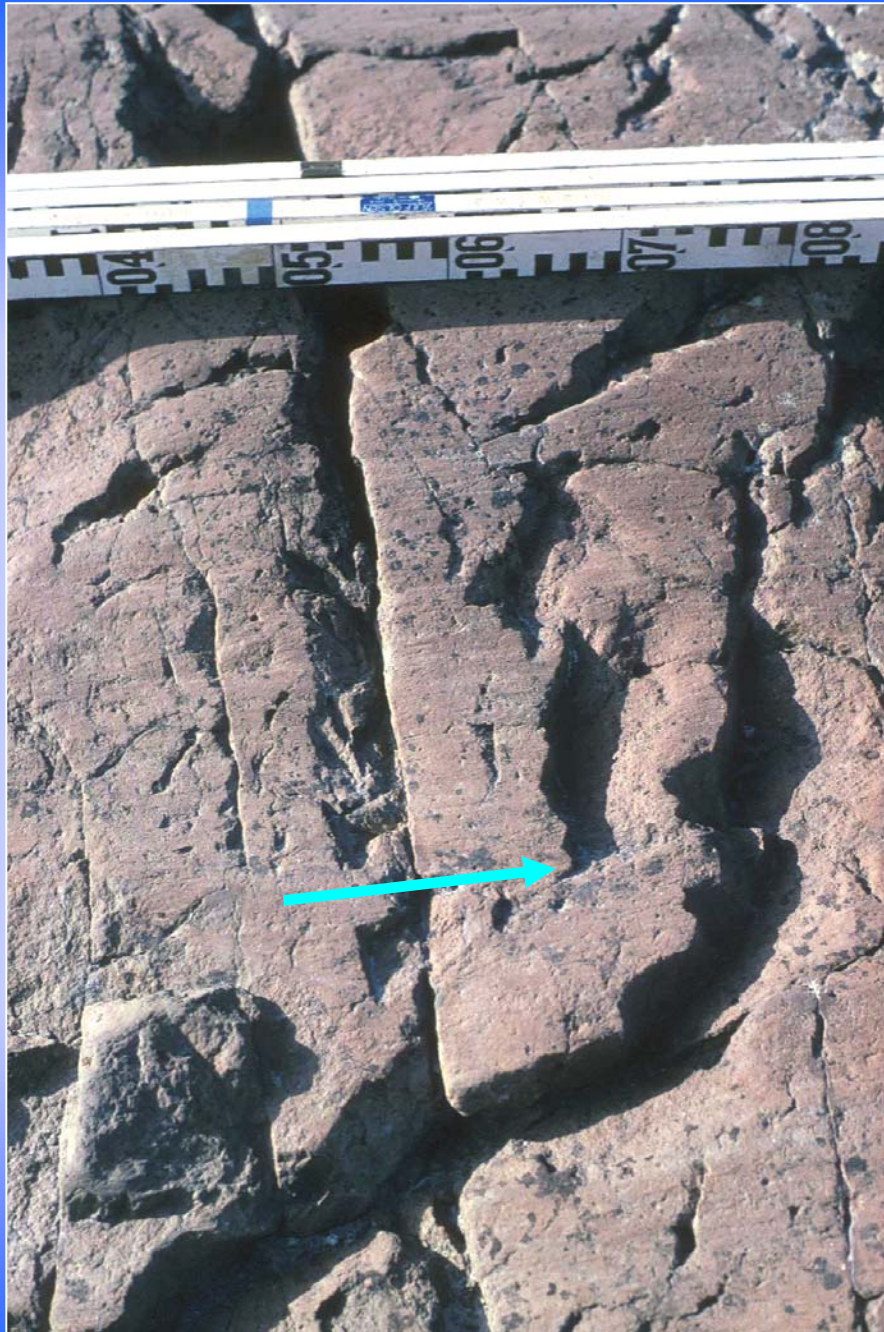




Rock structures







Chatter marks

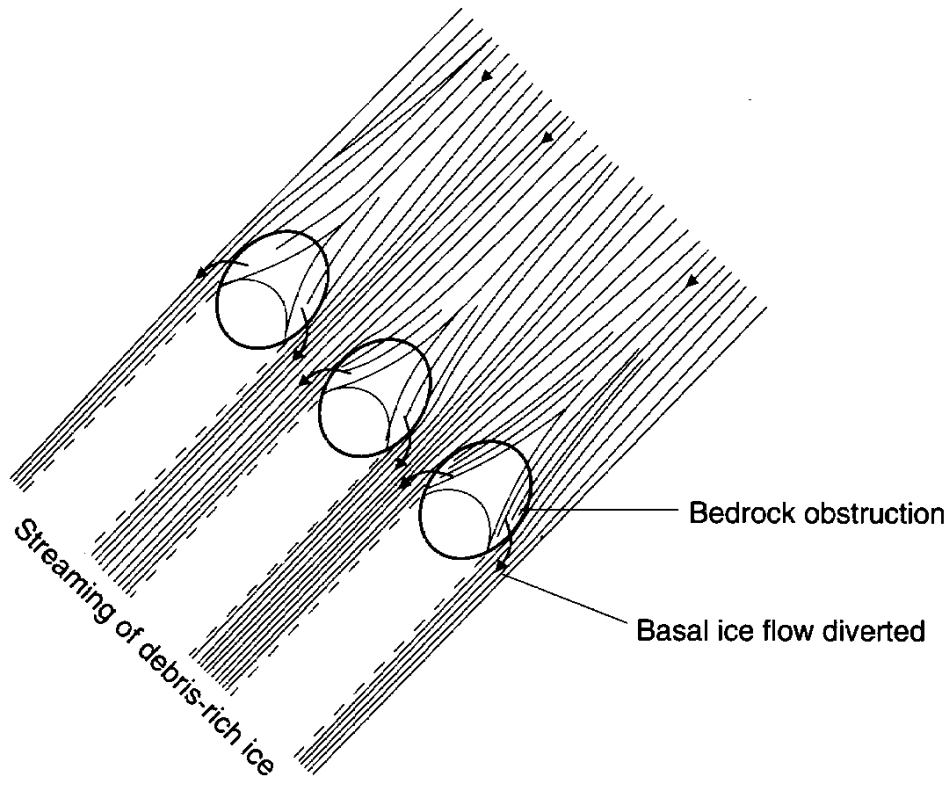
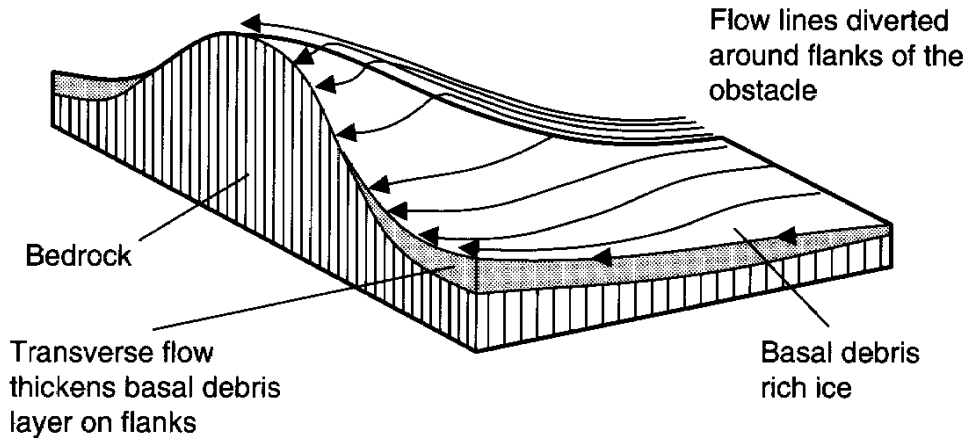


Crescentic gouge





Basal debris streaming





Sichelwannen





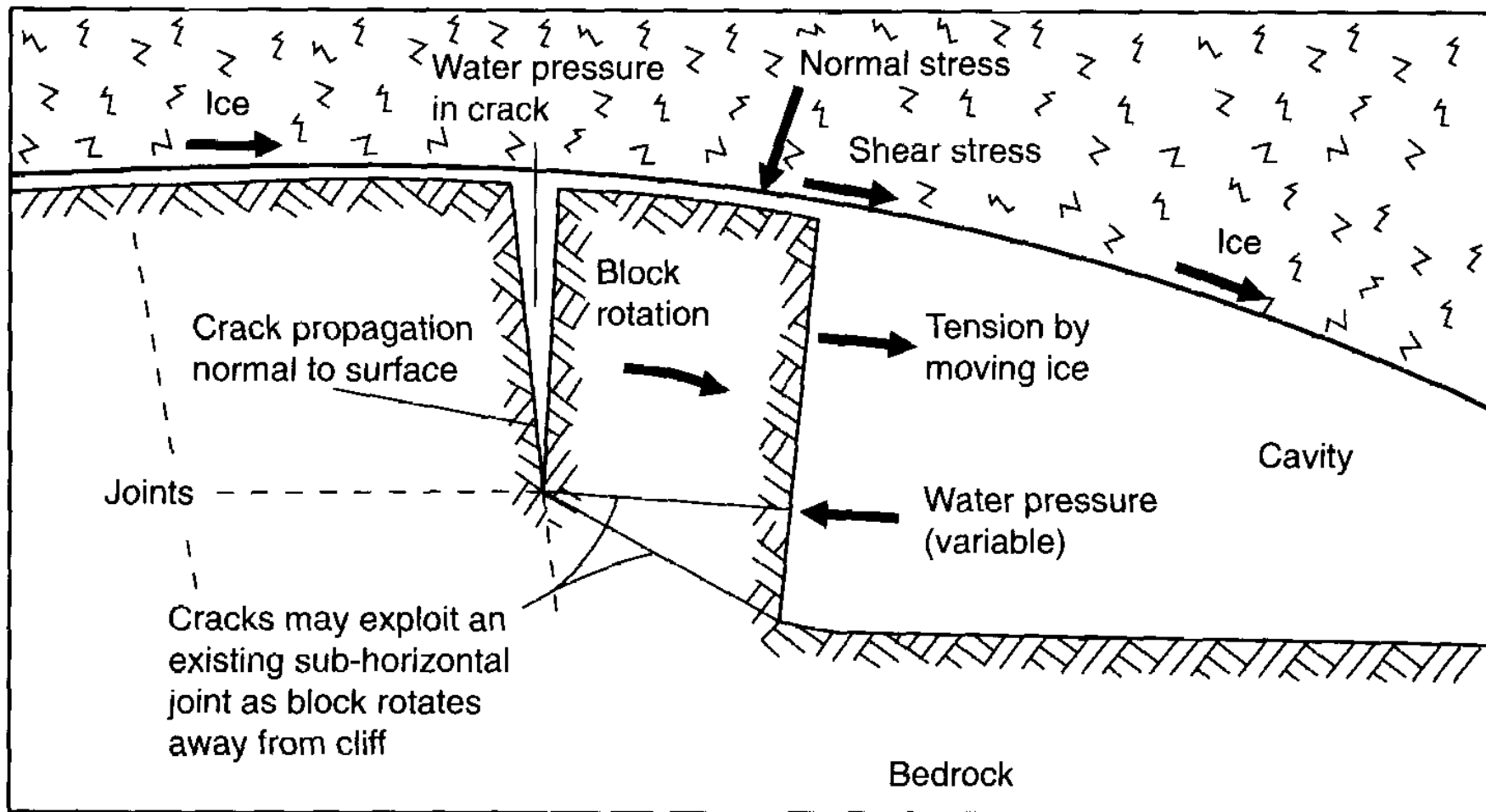


Roches moutonnées

Lodgement boulder









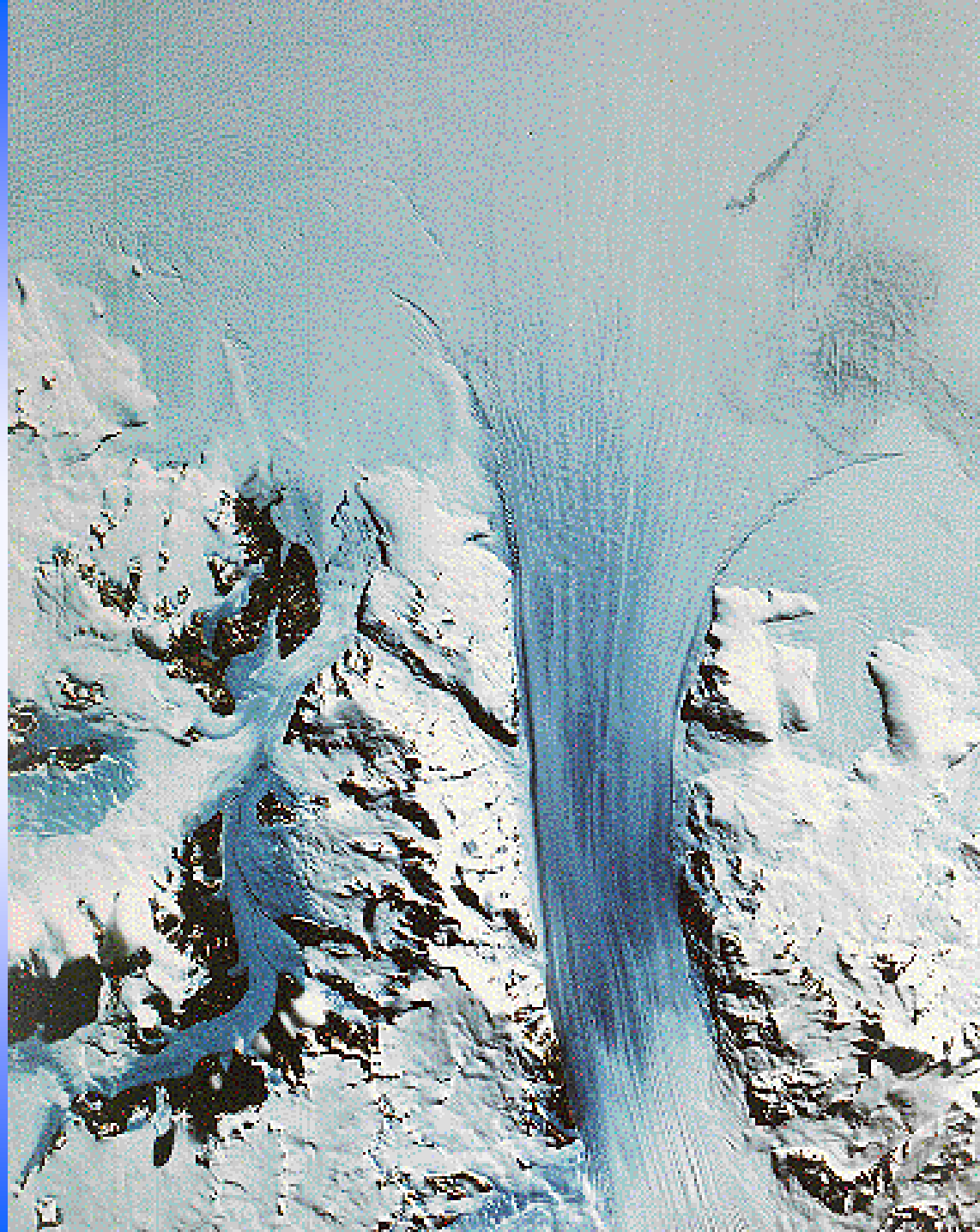


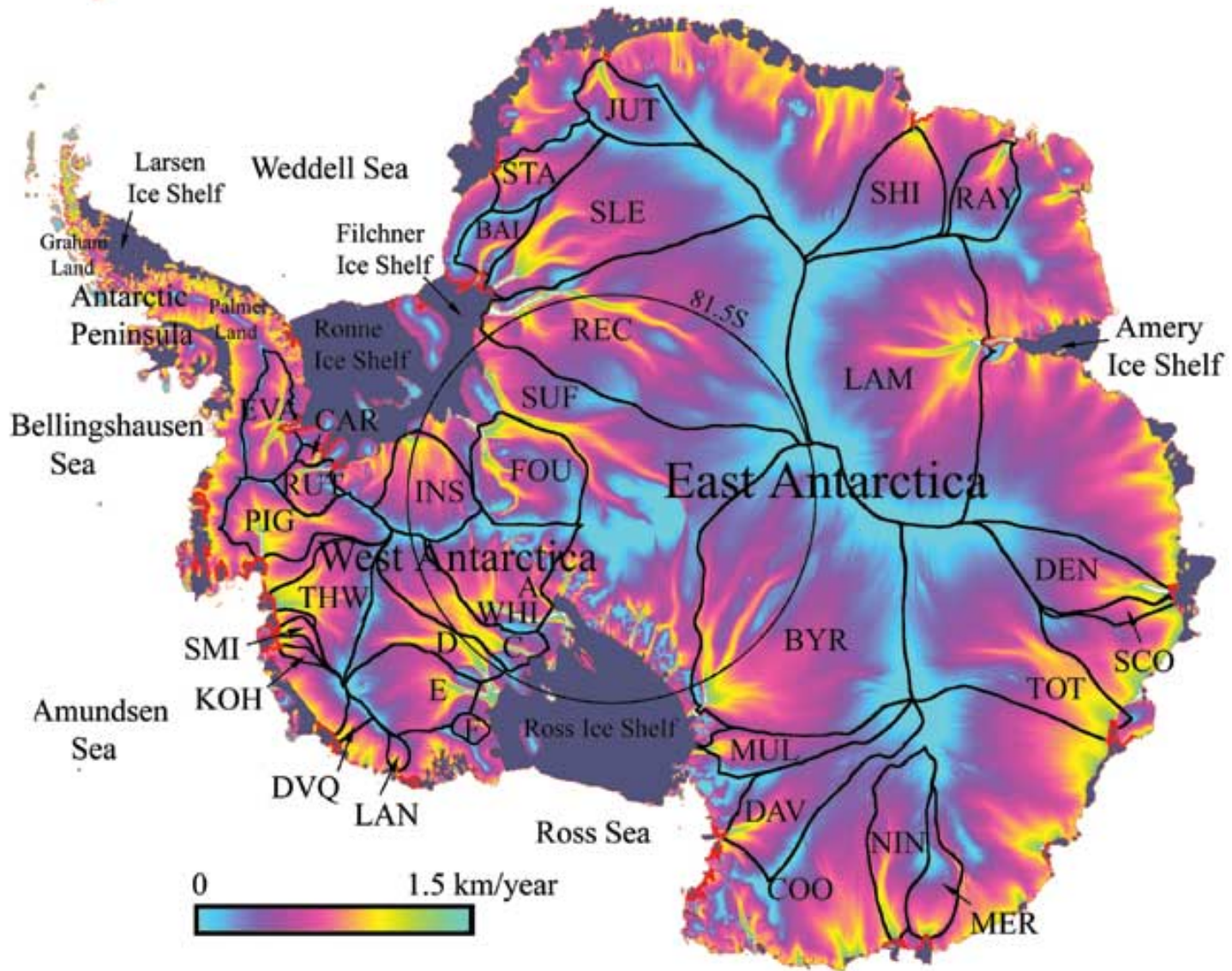


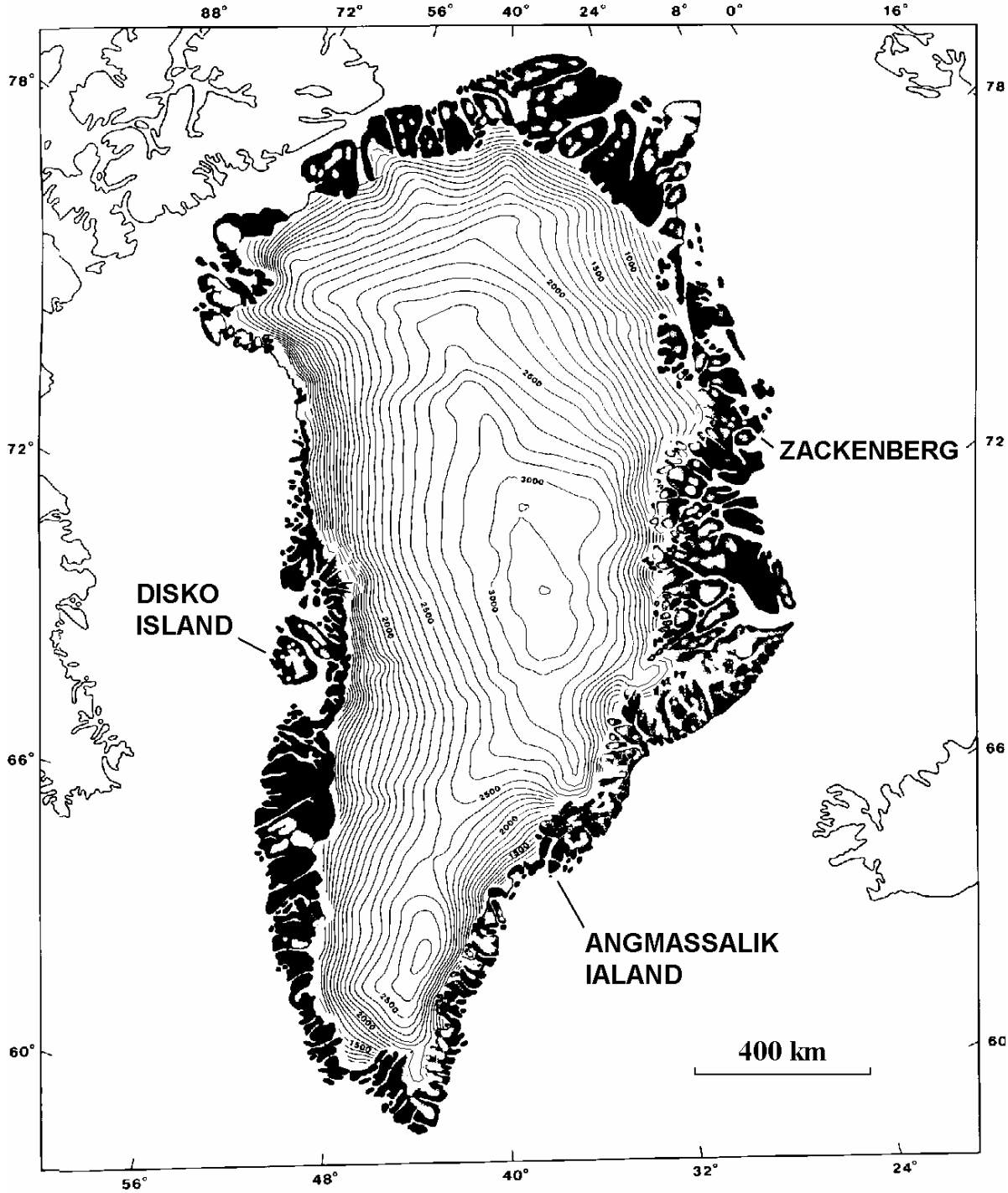


Fast flowing glaciers

Bird Icestream joins
the Ross Ice Shelf







































Oslo

