



Pleiades and paraglacial dynamic in Arctic: the central Lovèn glacier and proglacial area (Spitsbergen, 79 ° N)

Dominique LAFFLY ^a, Lennart NILSEN ^b, Jean-Michel FRIEDT ^c, Yannick Le NIR ^d

Renaud MARTI ^a, Yoo Kyung LEE ^e, Ji Young JUNG ^e

^a GEODE UMR 5602 CNRS, Université de Toulouse 2, France

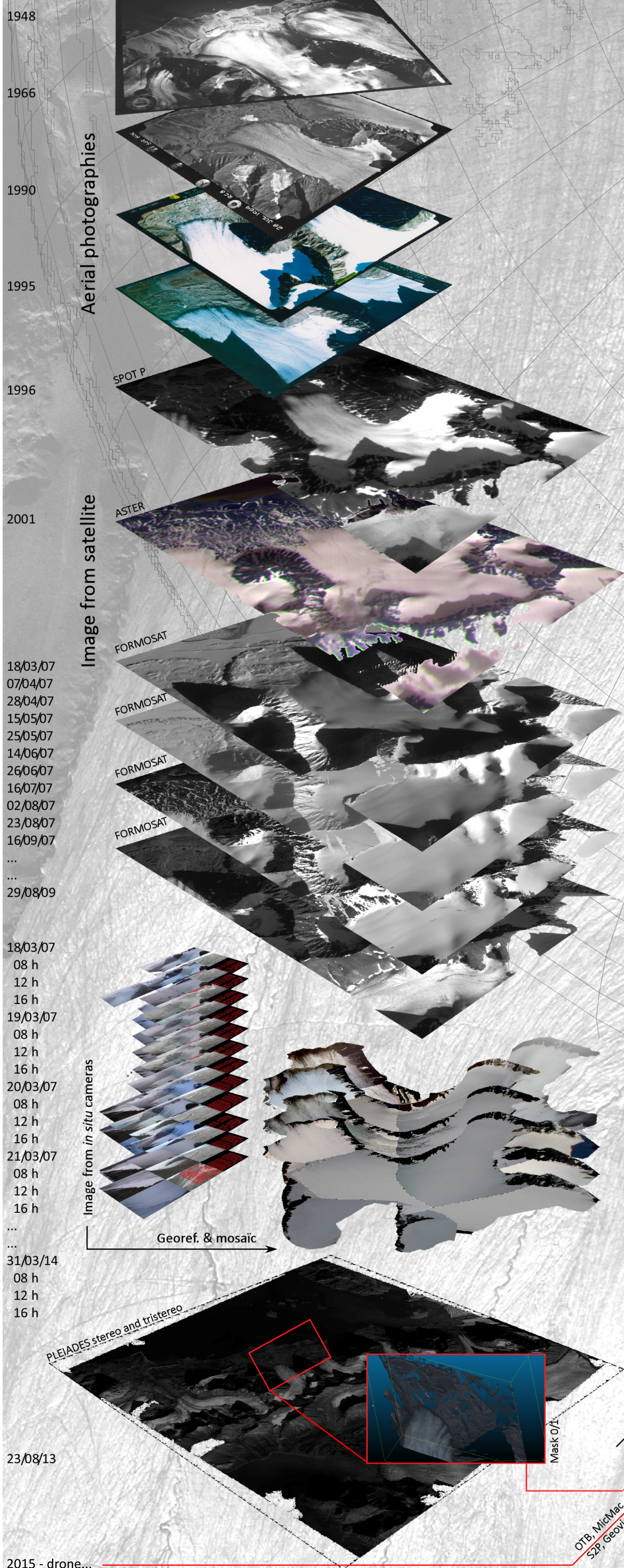
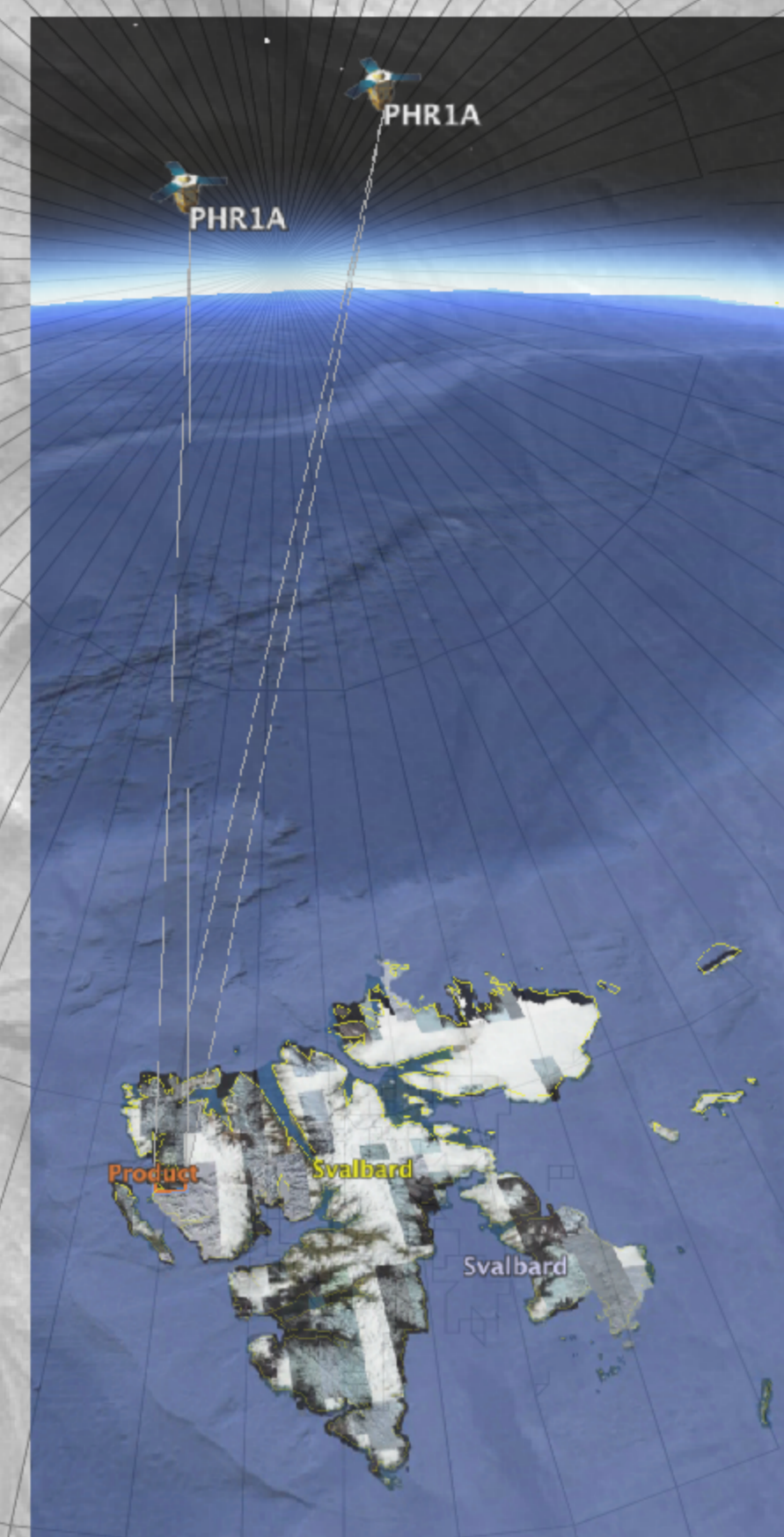
^b University of Tromsø, Dept. of Biology, Tromsø, Norway

^c FEMTO-ST UMR 6174 CNRS, Université de Besançon, France

^d EISTI (Ecole Internationale des Sciences de l'Information), Pau, France

^e KOPRI (Korean Polar Research Institute), Arctic Research Center, Incheon, Korea

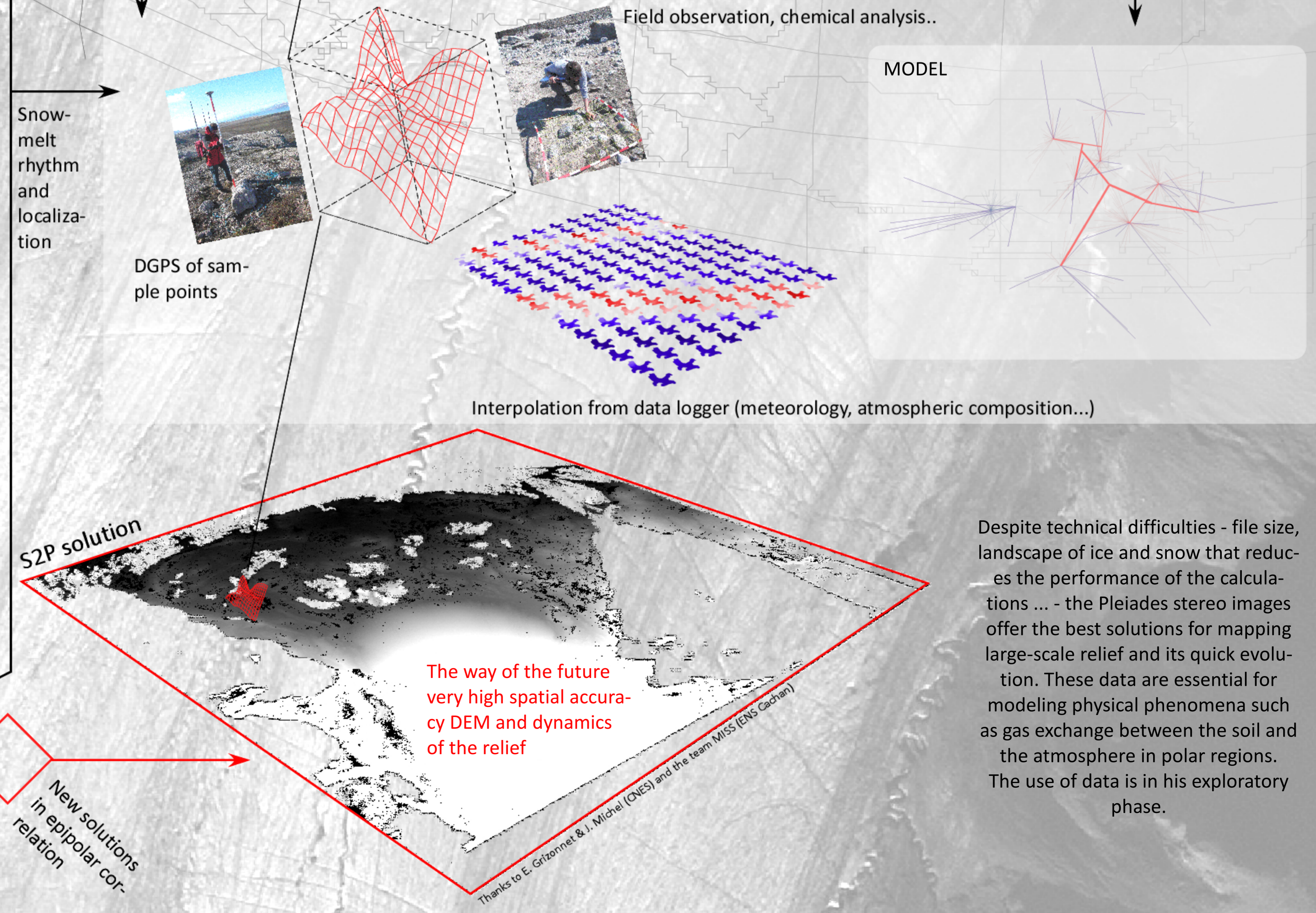
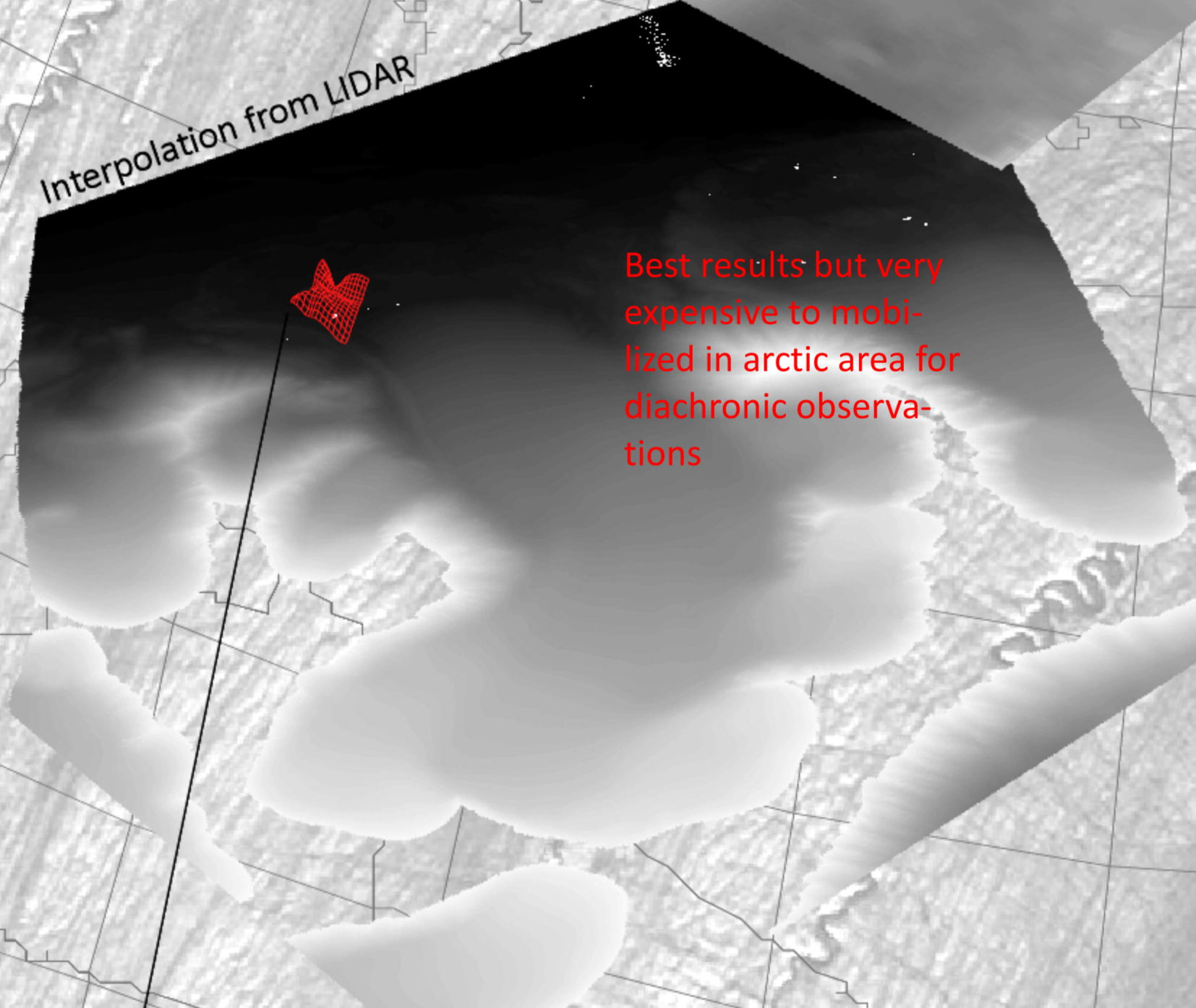
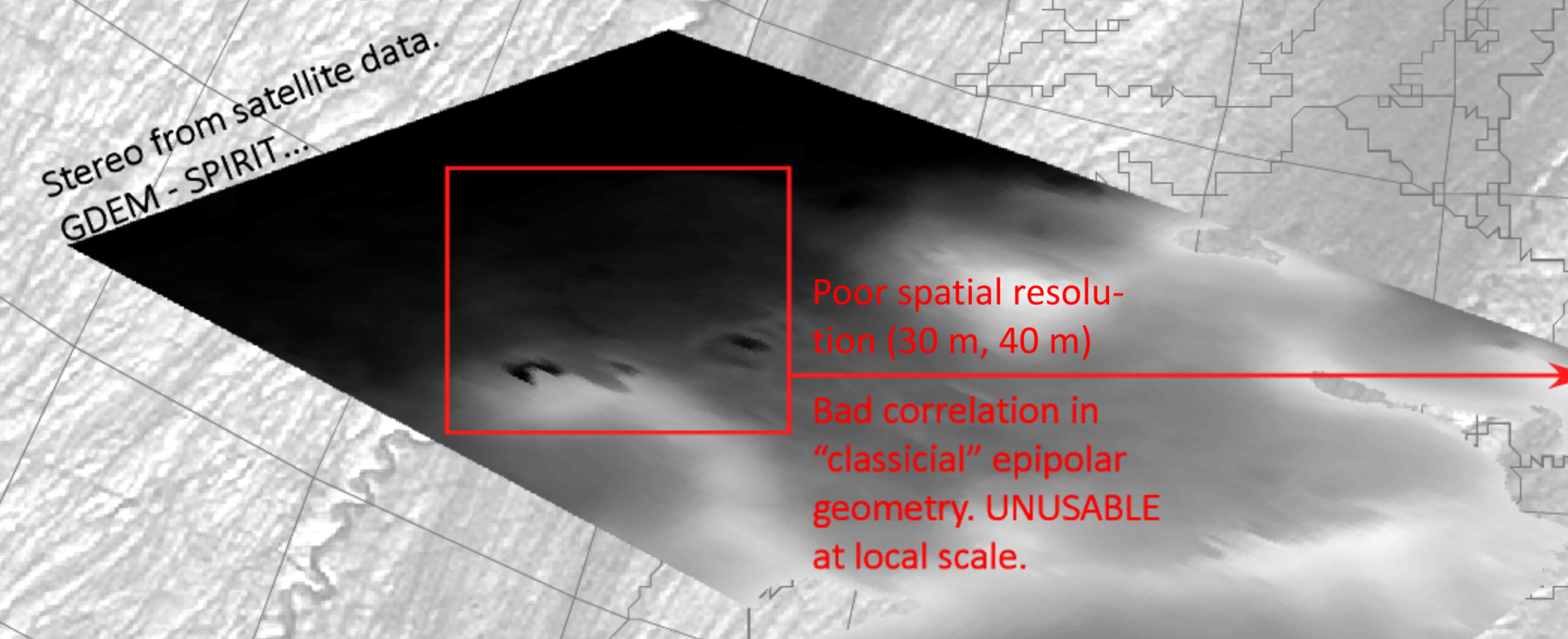
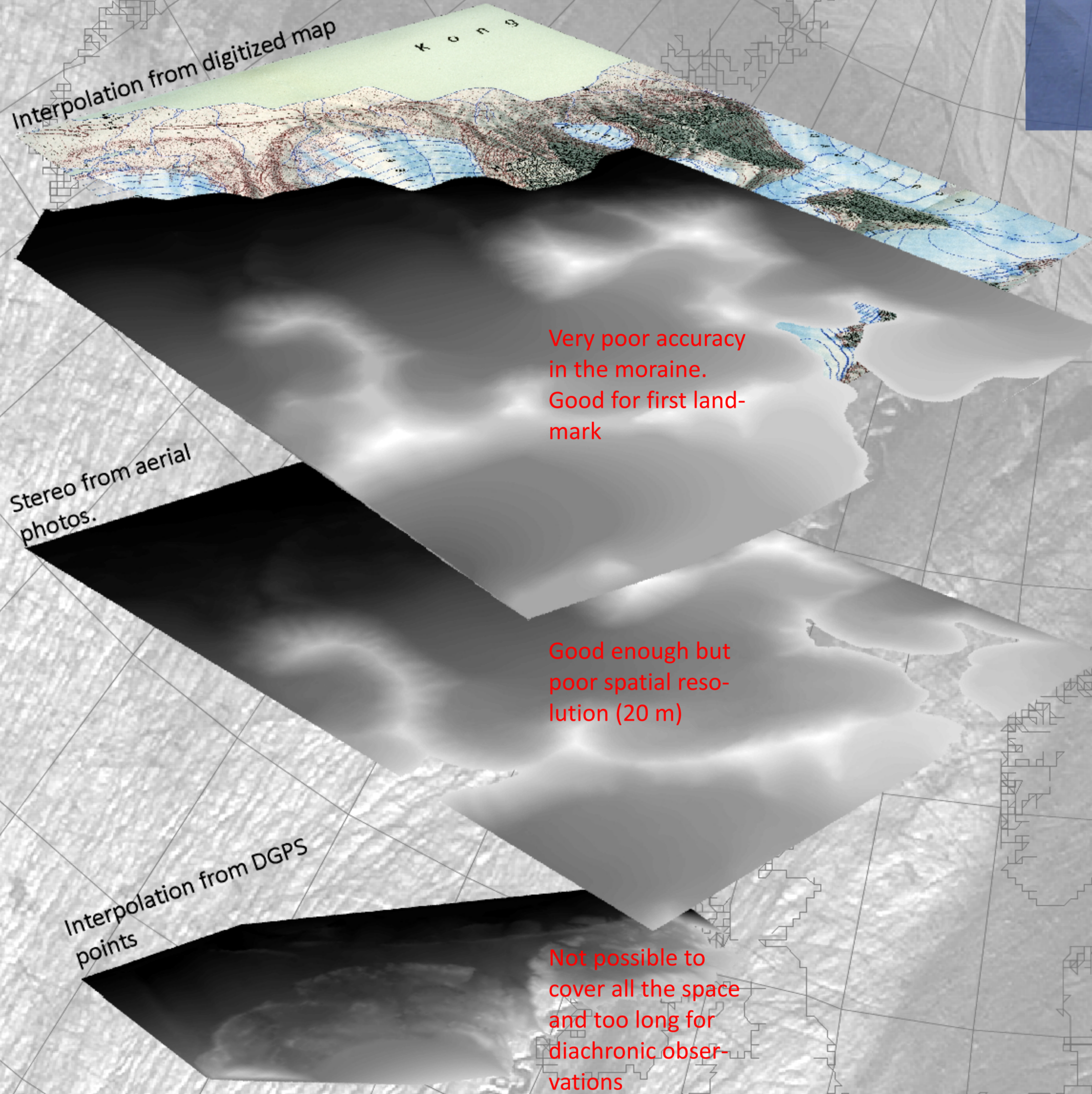
In the Arctic the impact of contemporary global warming accelerates the melting of glaciers since the end of the Little Ice Age (LIA). Alongside great glaciers and ice caps that give the key trends and regional rhythms of contemporary dynamics it is interesting to focus the research on small systems foothills. These provide information on the dynamics paraglacial who help shape the landscape while the glacier is no longer while releasing surfaces for gas exchange with the atmosphere - especially soil organic carbon - previously blocked by ice. Proglacial areas are so privileged place where spend most of the dynamics, while runoff is increasing because of the melting and remobilised chaotic shapes of glacial deposits, vegetation - if scattered is it - tends to contrary to stabilize the substrate while providing a diversity that is not found in the oldest areas equilibrium, such as the open tundra installed since the last major glaciation of the Weichselian (110,000 - 10,000 years) at the beginning Holocene.



Mapping the evolution of the glacier front

Mapping the snowmelt

Mapping the evolution of the relief



Despite technical difficulties - file size, landscape of ice and snow that reduces the performance of the calculations ... - the Pleiades stereo images offer the best solutions for mapping large-scale relief and its quick evolution. These data are essential for modeling physical phenomena such as gas exchange between the soil and the atmosphere in polar regions. The use of data is in his exploratory phase.

OTB, MicMac, S2P, Geoview
New solutions in epipolar correlation