16D.3 | **Documentation of the glacier retreat in the eastern part of the Granatspitz Mountains (Austrian Alps) using aerial photographs for the time period 2003-2009** (#184)

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This paper documents ongoing glacier retreat in the eastern part of the Granatspitz Mountains (Hohe Tauern Range, Austrian Alps) for the time period 2003-2009 using aerial photogrammetry. Aerial photographs of 2003, 2006, and 2009 were made available by the Hydrological Service of the Regional Government of Salzburg, the Federal Office of Metrology, Surveying and Mapping, Vienna, and the Regional Government of the Tyrol, respectively. High resolution multi-temporal digital elevation models and digital orthophotos of the area of interest were derived using digital photogrammetric methods to provide a sound basis for glaciological research. Glacier outlines of the three glacial stages were mapped interactively. Temporal change in area and surface height of the glaciers mapped clearly document glacier retreat. Glacier mass balance based on the geodetic method was calculated for Stubacher Sonnblickkees (Glacier). Mean annual specific net balance amounts to -656 mm w.e. for the time period 2003-2009, with a mass balance gradient of 324 mm w.e. $(100\ m)^{-1}$ and an equilibrium-line altitude (ELA) of 2995 m a.s.l.. Digital orthophoto maps and other thematic maps, e.g., showing surface height change, were prepared to support further data interpretation. Both the study area and its spatio-temporal change were visualized with special emphasis on the glaciers in a computer generated video film. Another film (exposure 29 August 2011) shows the lower part of Stubacher Sonnblickkees and its surroundings for reasons of comparison.