Supplement of Biogeosciences, 20, 1649–1669, 2023
https://doi.org/10.5194/bg-20-1649-2023-supplement

Biogeosciences Open Access EGU

Supplement of

Local environmental context drives heterogeneity of early succession dynamics in alpine glacier forefields

Arthur Bayle et al.

Correspondence to: Arthur Bayle (arthur.bayle.env@gmail.com)

Glacier Name	Year	Date	Source	Resolution	Supplementary information
Glacier des Pélerins (PEL)	1984	09/07/1984	IGN	50 cm	C3428-0024_1984_IFN74_IRC_0596 *
	2004	26/06/2004	IGN	50 cm	CP04000702_2004_fd74_c_20000_0816 *
	2009	13/08/2009	Google Earth Pro	< 1 m	Image 2020 © Maxar Technologies
	2018	27/09/2018	SPOT 6/7	1.5 m	NA
Glacier du Tour (TR)	1984	09/07/1984	IGN	50 cm	C3428-0024_1984_IFN74_IRC_0596 *
	2004	26/06/2004	IGN	50 cm	CP04000702_2004_fd74_c_20000_0816 *
	2009	13/08/2009	Google Earth Pro	< 1 m	Image 2020 © Maxar Technologies
	2012	08/09/2012	Google Earth Pro	< 1 m	Image 2020 © Maxar Technologies
	2018	27/09/2018	SPOT 6/7	1.5 m	NA
Glacier Blanc (GB)	1986	05/09/1986	IGN	50 cm	C3536-0041_1986_F3536-3636_0030 *
	1994	03/08/1994	IGN	50 cm	CN93000024_1993_IFN05_IRC_1173 *
	2003	11/07/2003	IGN	50 cm	CP03000082_2003_fd0038_250_c_0364 *
	2013	08/09/2012	IGN	50 cm	CP13000172_13FD0535 × 00010_01790 *
	2018	27/09/2018	SPOT 6/7	1.5 m	NA
Glacier de Saint-Sorlin (STS)	1986	06/09/1986	IGN	50 cm	C3435-0011_1986_F3435-3635_0298 *
	2003	15/07/2003	IGN	50 cm	CP03000082_2003_fd0038_250_c_0418 *
	2006	21/09/2006	IGN	50 cm	CP06000192_FD0073x193_8863*
	2016	04/10/2016	IGN	50 cm	© BD ORTHO 2016
Glacier de Gébroulaz (GEB)	1986	25/08/1986	IGN	50 cm	C3534-0051_1986_F3534-3634_0044 *
	2006	05/09/2006	IGN	50 cm	CP06000192_FD0073x148_6605 *
	2016	04/10/2016	IGN	50 cm	© BD ORTHO 2016
Glacier du Lauson (LAU)	1975	.../.../1975	RAVA	50 cm	GeoSCT 2020 CTR – Flight CGR 1975
	1999	.../.../1999	RAVA	50 cm	GeoSCT 2020 CTR – Flight CGR 1991 update CGR IT2000
	2005	.../.../2005	RAVA	50 cm	GeoSCT 2020
	2012	.../.../2012	RAVA	20 cm	GeoSCT 2020
	2019	.../.../2019	Google Earth Pro / Sentinel-2	< 1 / 10 m	Image 2020 © Maxar Technologies / ESA 2020 Copernicus
Glacier du Lavassey (LAV)	1975	.../.../1975	FMS/ARPA	50 cm	GeoSCT 2020 CTR – Flight CGR 1975
	1999	.../.../1999	FMS/ARPA	50 cm	GeoSCT 2020 CTR – Flight CGR 1991 update CGR IT2000
	2005	.../.../2005	FMS/ARPA	50 cm	GeoSCT 2020
	2012	.../.../2012	FMS/ARPA	20 cm	GeoSCT 2020
	2019	.../.../2019	Google Earth Pro / Sentinel-2	< 1 / 10 m	Image 2020 © Maxar Technologies / ESA 2020 Copernicus
Glacier d'Orny (OR)	1975	---	---	---	---
	1999	---	---	---	---
	2005	---	---	---	---
	2012	---	---	---	---
	2019	---	---	---	---

* : Mission ID from https://remonterletemps.ign.fr/

IGN : Institut national de l'information géographique et forestière https://www.ign.fr/

FMS : Fondazione Montagna Sicura https://www.fondazionemontagnasicura.org

Table S1. Detailed description of the sources used to improve the delineation of glacier outlines used in this study.

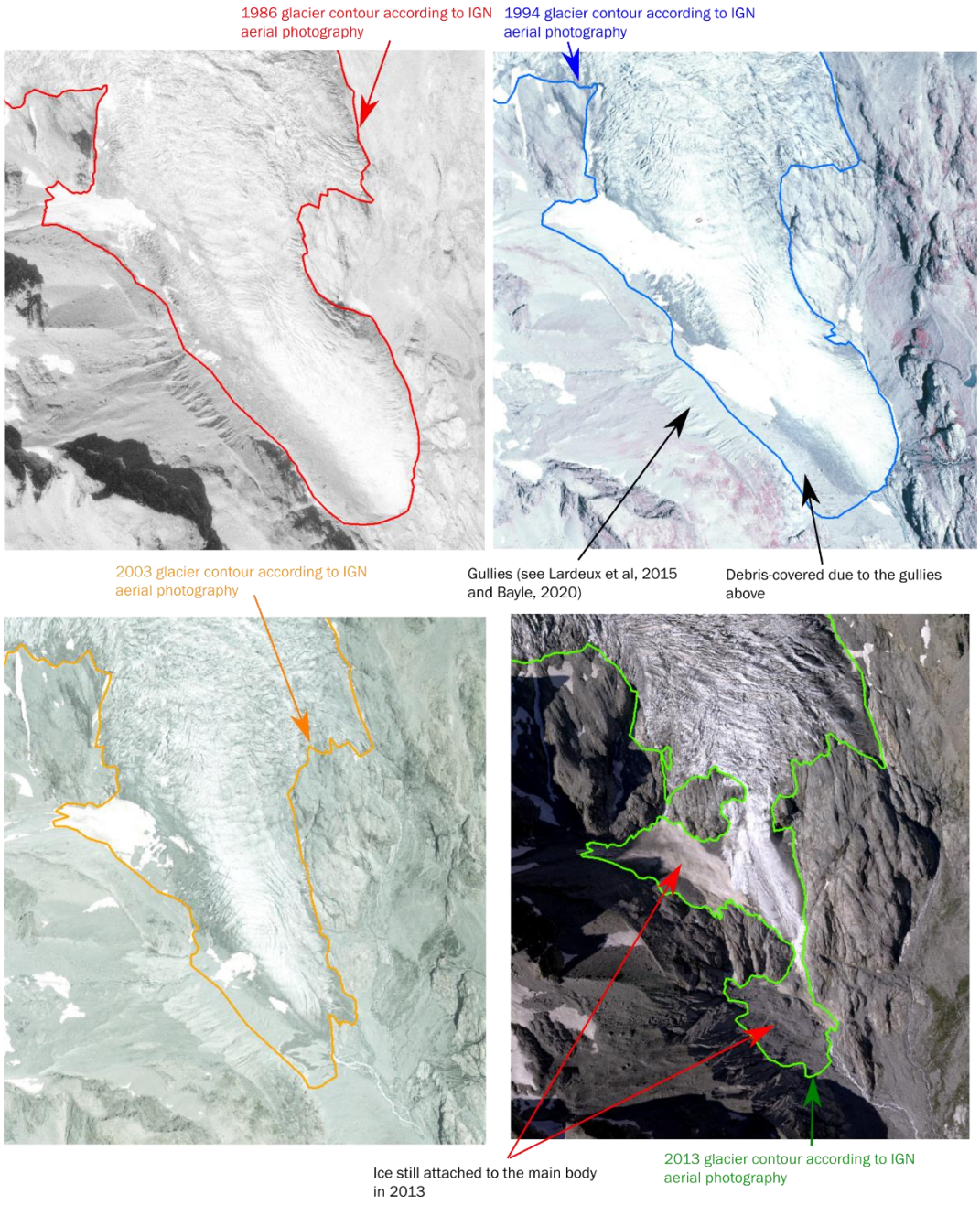

Figure S1. Detailed description of the Glacier Blanc (GB) glacier forefield. Background images © IGN

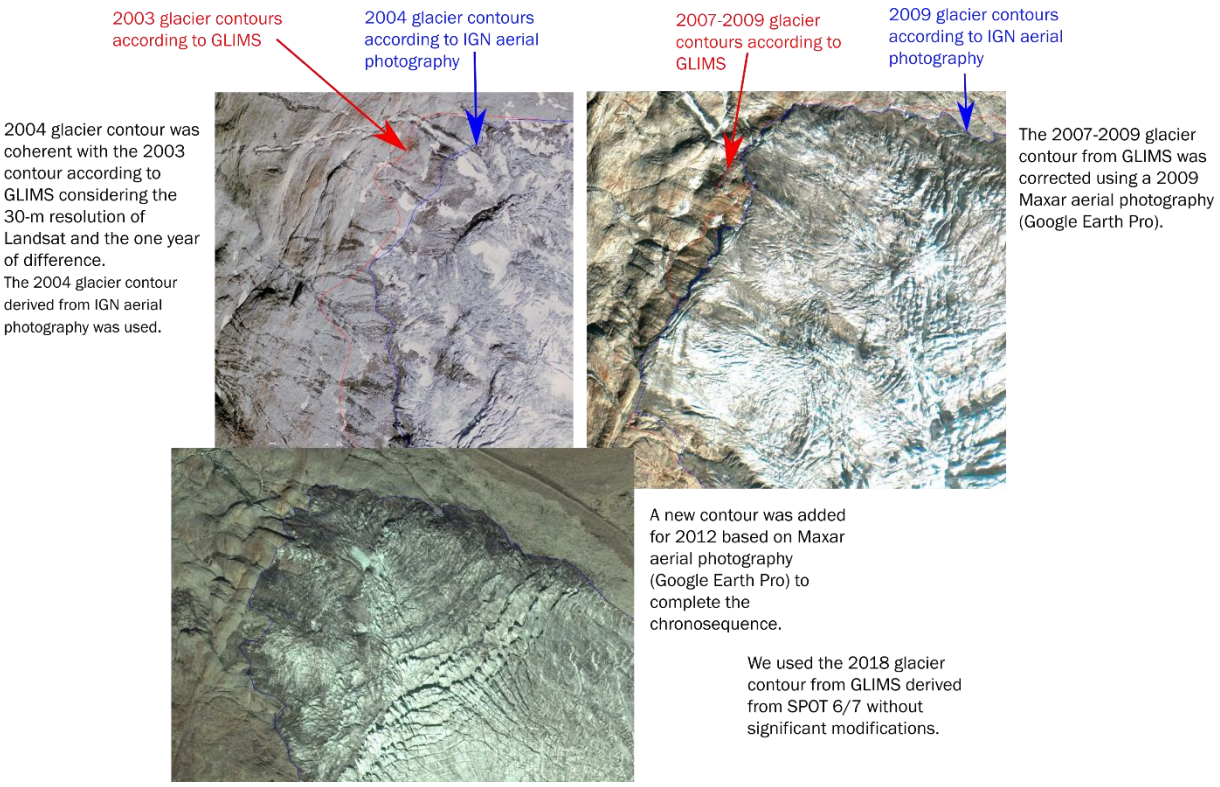

Figure S2. Detailed description of the Glacier du Tour (TR) glacier forefield. Background images © IGN

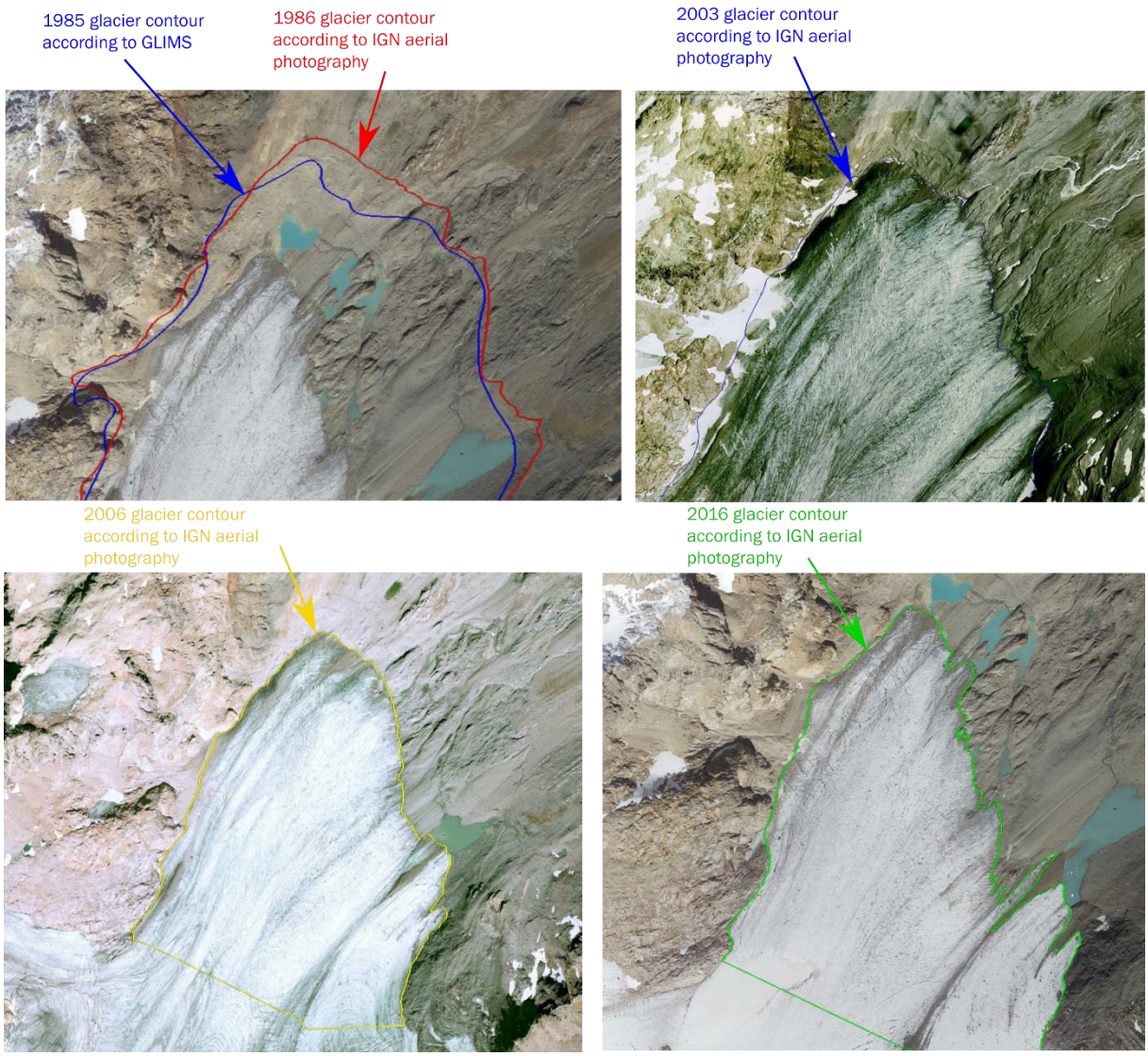

Figure S3. Detailed description of the Glacier de Saint-Sorlin (STS) glacier forefield. Background images © IGN

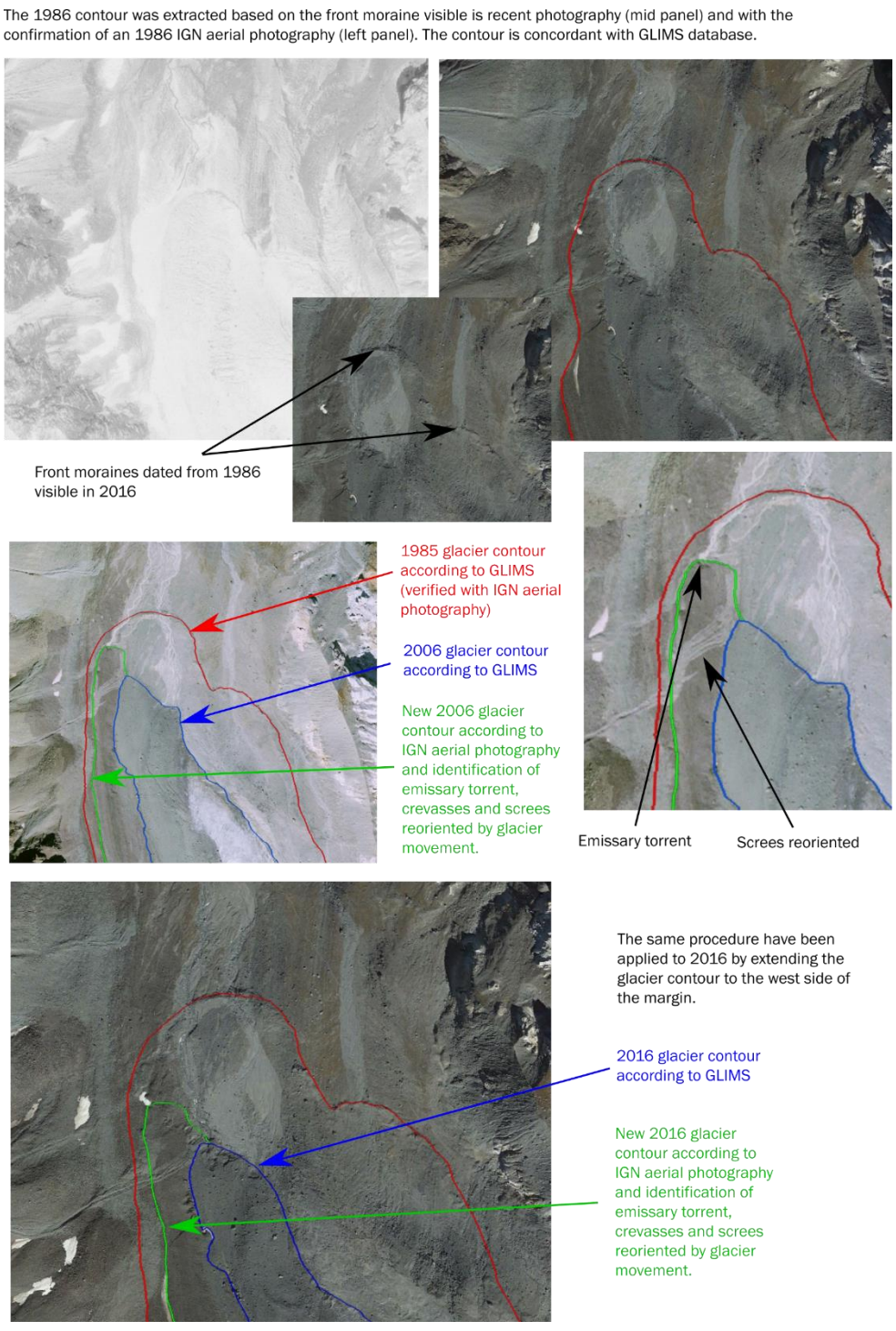

Figure S4. Detailed description of the Glacier de Gébroulaz (GEB) glacier forefield. Background images © IGN

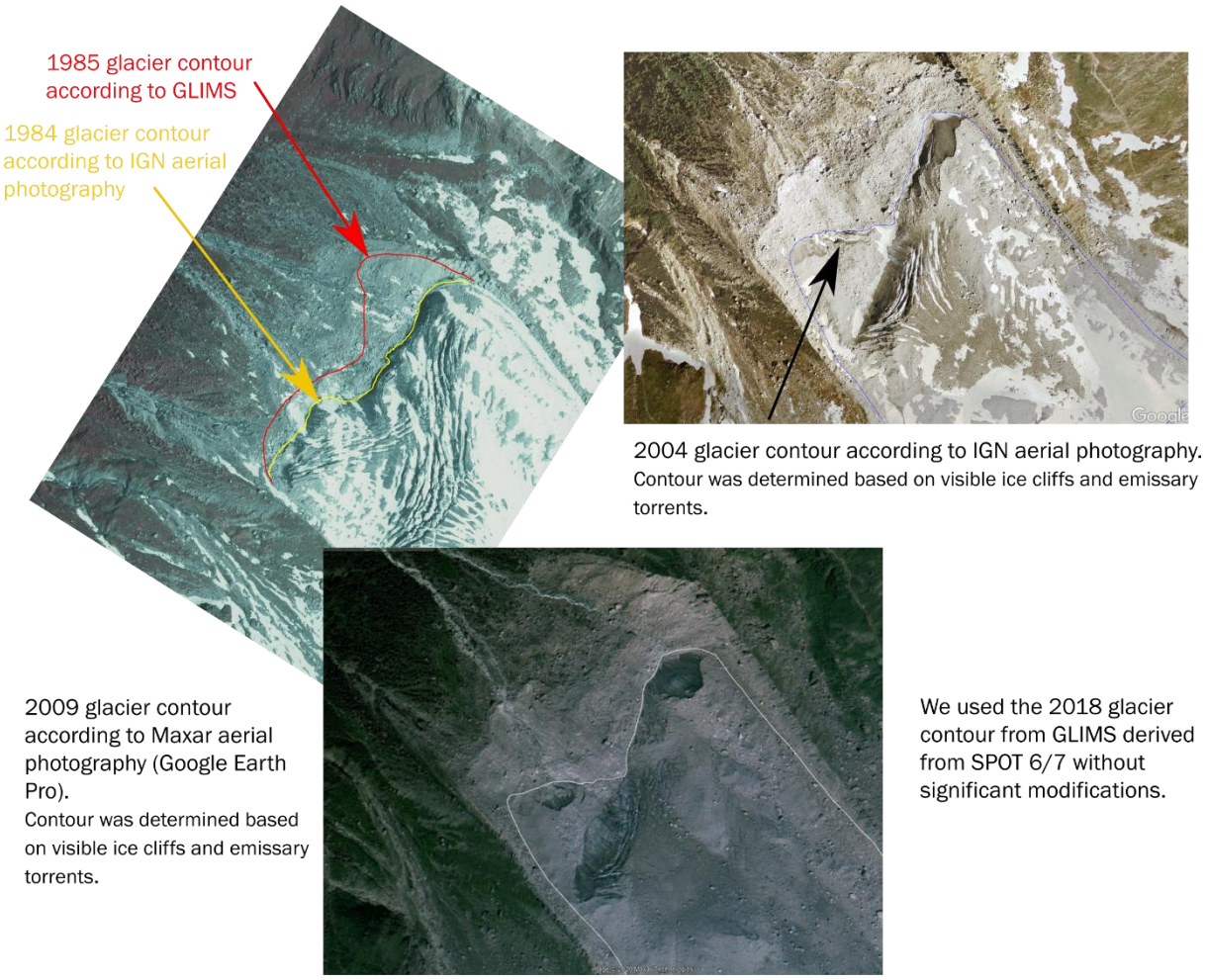

Figure S5. Detailed description of the Glacier des Pèlerins (PEL) glacier forefield. Background images © IGN

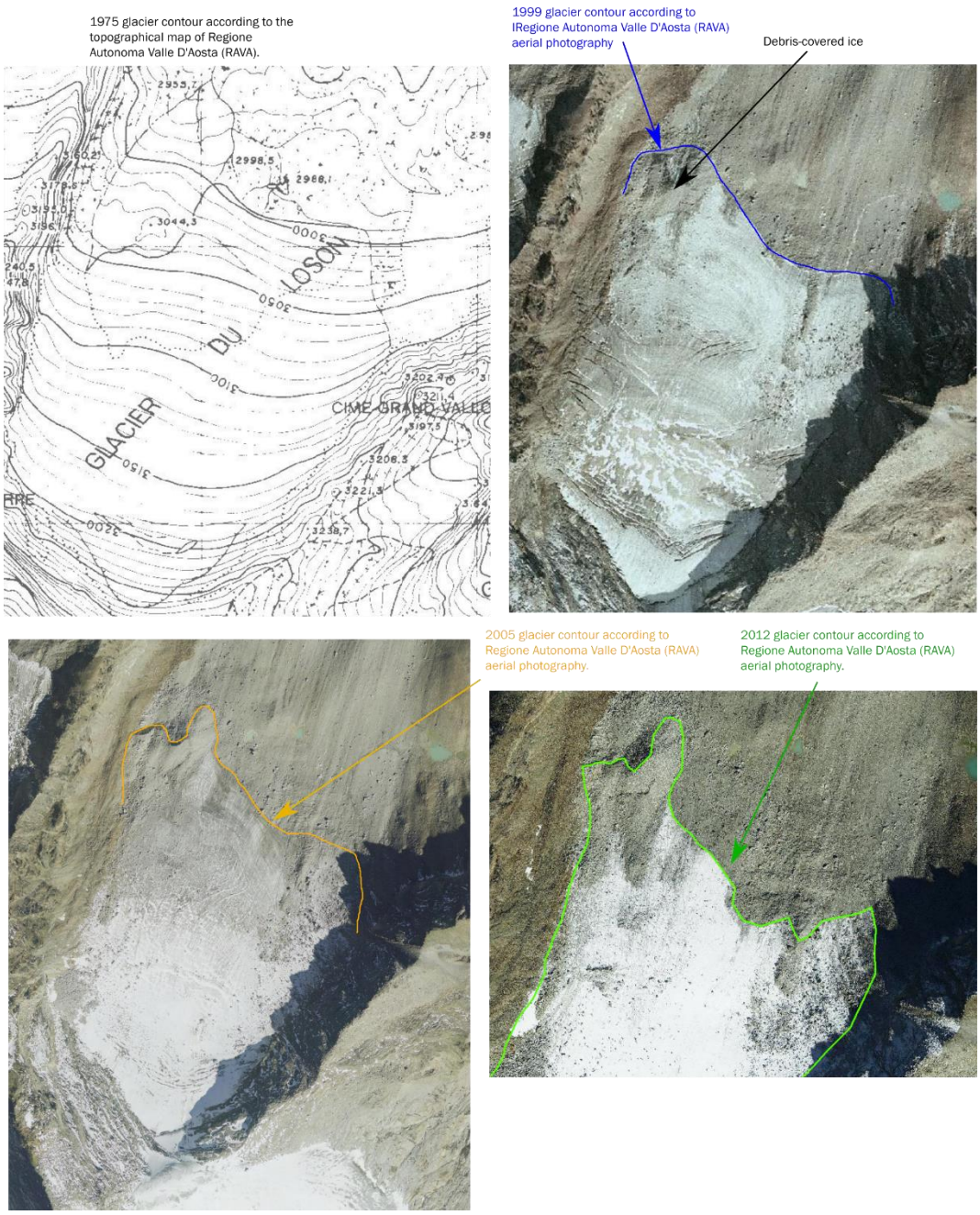

Figure S6. Detailed description of the Glacier du Lauson (LAU) glacier forefield. Background images © RTM

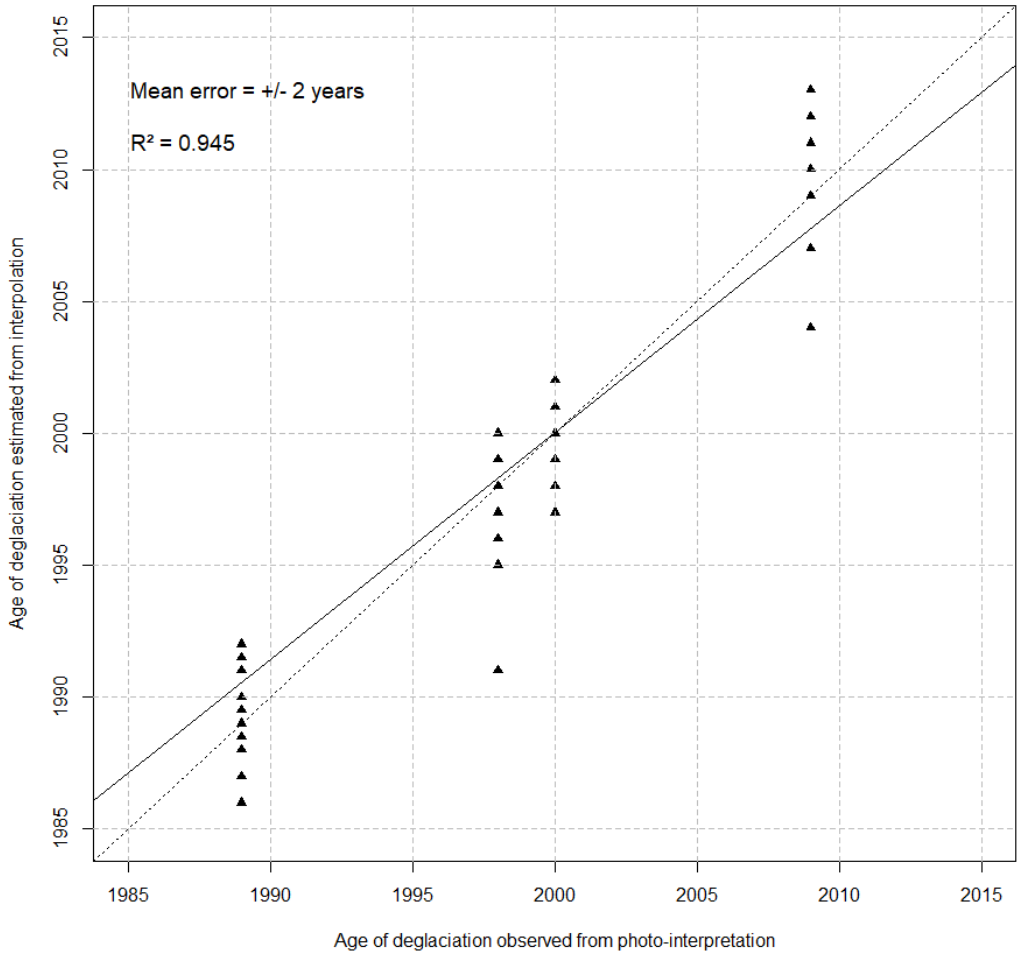

Figure S7. Validation of the "age of deglaciation" interpolation method using the chronosequence of deglaciation from Bayle (2020) composed of 4 sub-metric glacier outlines not used for the interpolation.

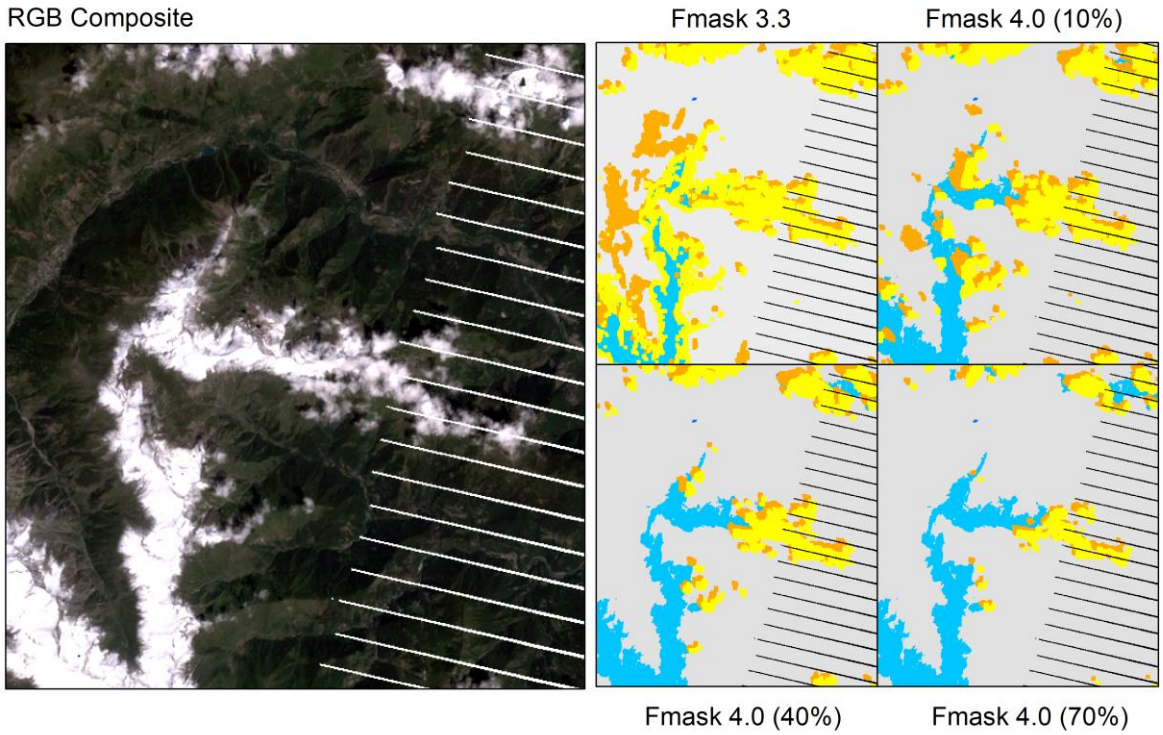

Figure S8. Comparison of cloud masks from Fmask 3.3, Fmask 4.0 with a cloud probability threshold of respectively 10, 40 and 70%. The scene is from Landsat 7 ETM+, Path 195 Row 029, captured the 16/07/2019.

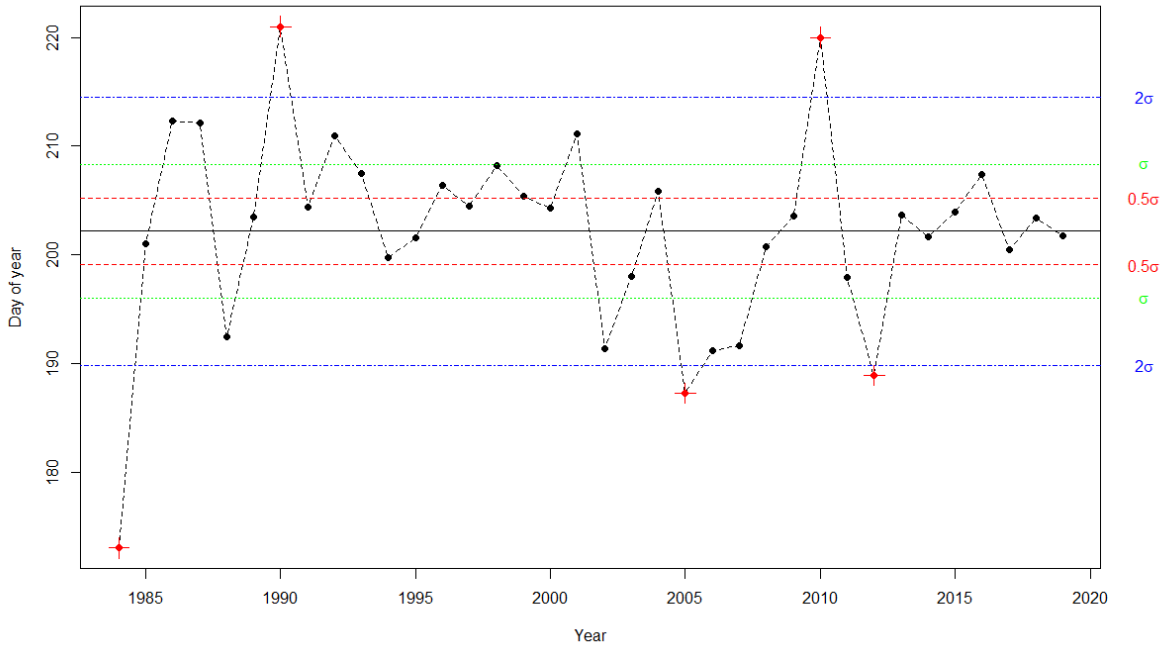

Figure S9. Mean day of year of retained summer dates over a random pixel for each year of the time series. Black horizontal lines indicate the mean over the entire time series. Colored dashed lines indicate degree of standard deviation. Red cross corresponds to discarded years according to criteria discussed in the text.