

Penna, I.M., Hermanns, R.L., Nicolet, P., Morken, O.A., Dehls, J., Gupta, V., and Jaboyedoff, M., 2020, Airblasts caused by large slope collapses: GSA Bulletin, <https://doi.org/10.1130/B35531.1>.

Supplemental Material

Table S1. Main discontinuities affecting the granite at the Yumthang headscarp.

Figure S1. Sequence of satellite images showing the evolution of Yumthang rock avalanche. The rock avalanche occurred between 05:41 and 12:13 UTC on 11 March 2015 as shown by the Rapid-Eye (Planet Team, 2017) and Sentinel-1 images on that day. The extent of the deposit is outlined in red in all images. Note that the Sentinel-1 images show radar intensity. As the reflection is low on water bodies, the lake formed in the dammed river appears dark. On the 11th of March image, the lake is not filled, while on the 4th of April, the landslide-dam is already breached. The images from Pleiades-1 show that two years later, the lake is partly filled with sediments.

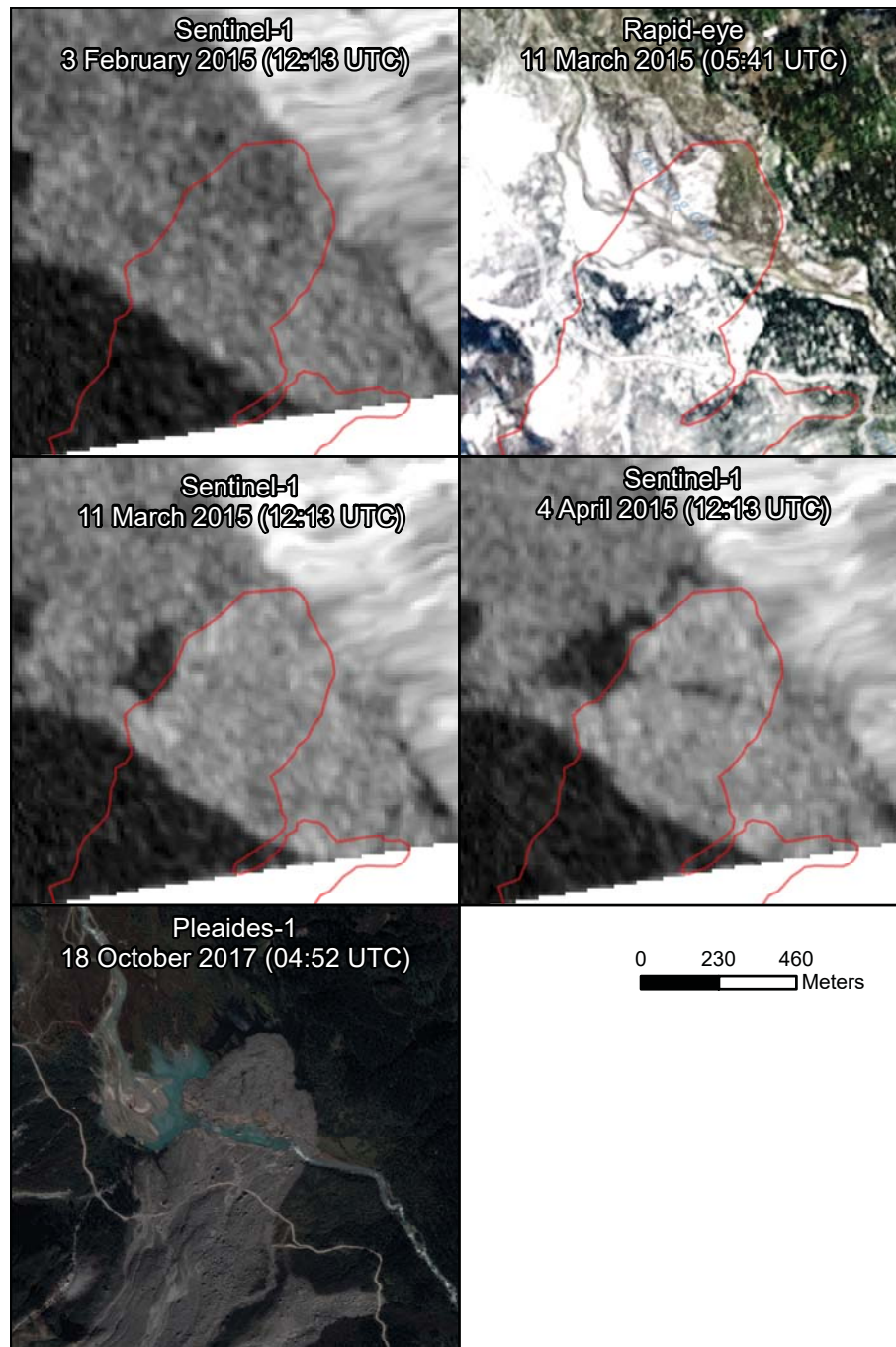
Figure S2. (A) View of the detachment zone of the Yumthang rock avalanche. Main discontinuities are indicated. (B) Hillshade with indication of the main sets of discontinuities. The arrows indicate the downstream direction of the valleys. (C) Stereographic plots (Equal angle, lower hemisphere) with the kinematic analysis overlain. (D) General hillshade and satellite image showing the location of the detachment zone at the confluence of two valleys.

Figure S3. Picture and schematic illustration of airblast interacting with the tree trunk on the distal part of the Yumthang airblast damage area. Note that the preserved branches are in the shadow area, protected by the main trunk.

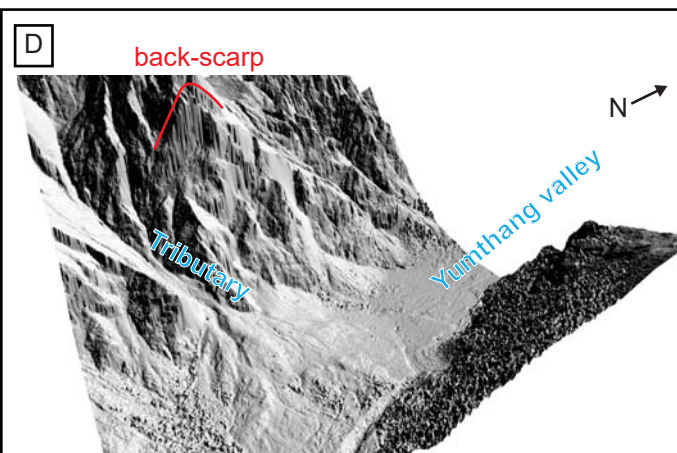
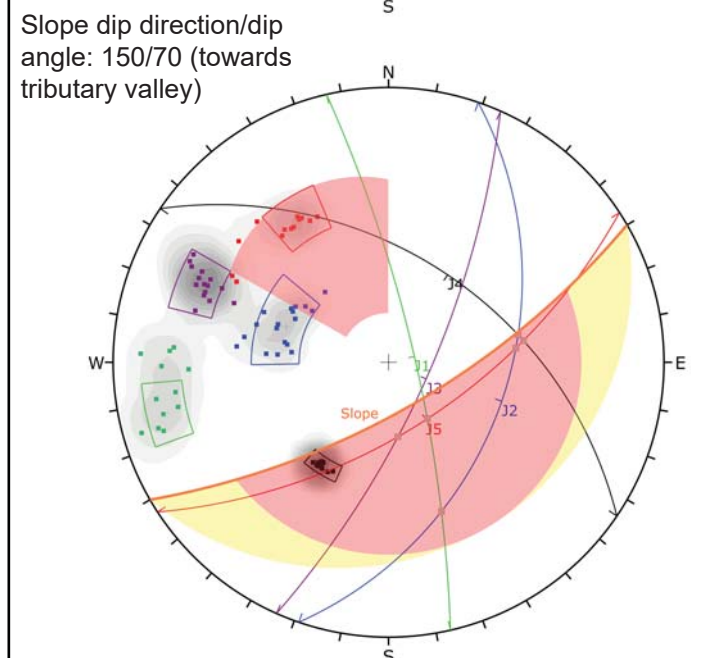
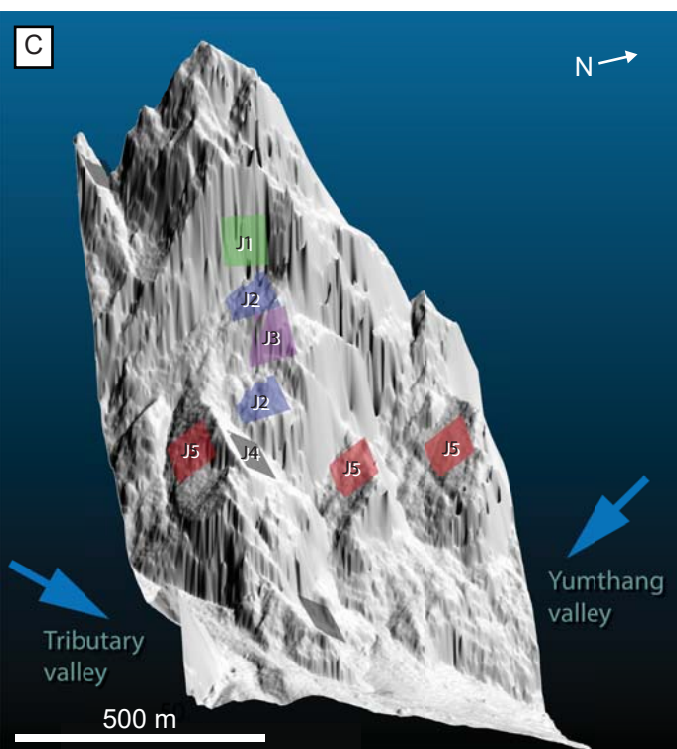
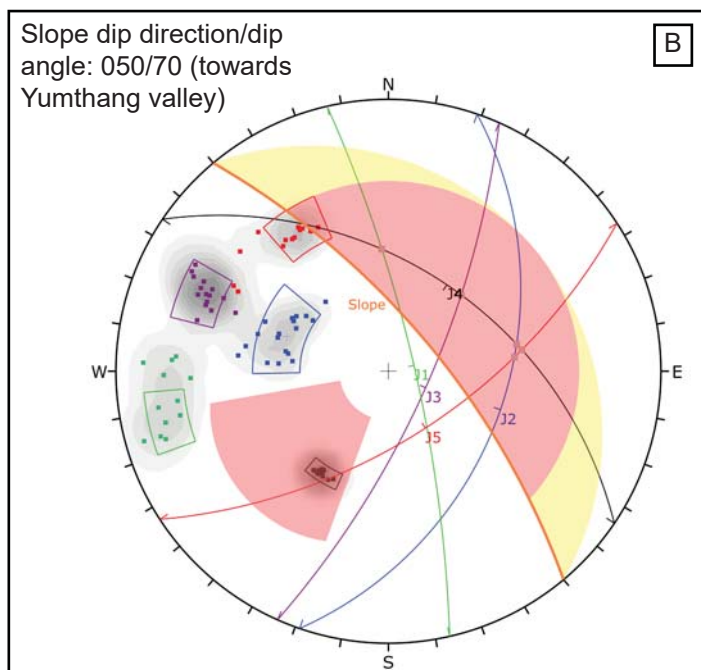
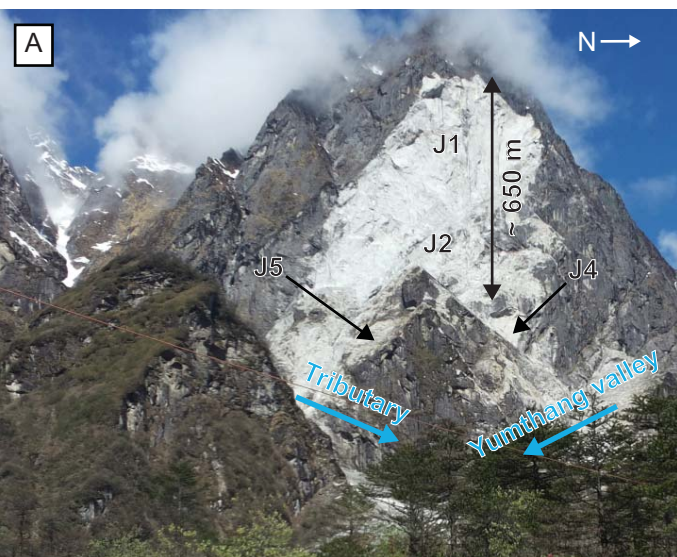
TABLE S1. MAIN DISCONTINUITIES AFFECTING THE GRANITE AT THE
YUMTHANG HEADSCARP

Structure ID	Dip direction/dip
J1	077/79
J2	109/43
J3	114/73
J4	034/48
J5	147/62

B35531 Penna et al. Figure DR1



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B35531R Penna et al._Figure DR3

