

Planetary Surface Processes

Cratering

Gravity

Tectonics

Volcanism

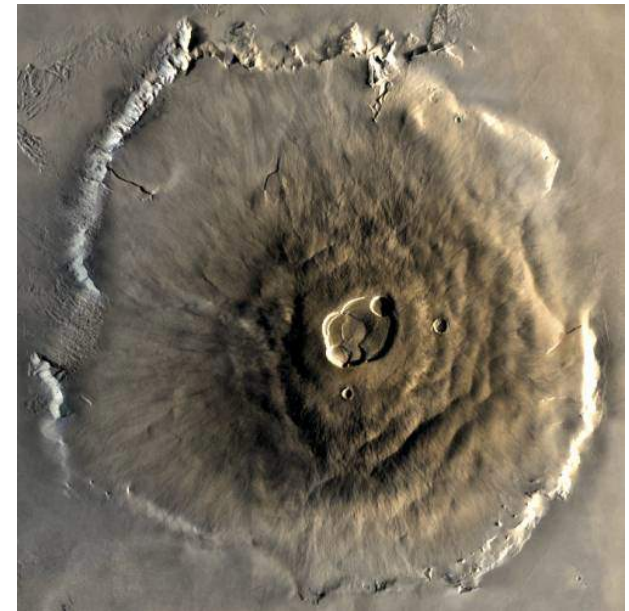
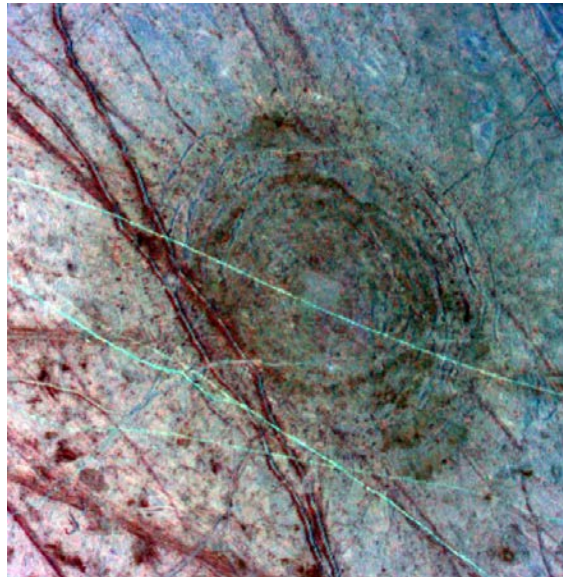
Winds

Fluvial

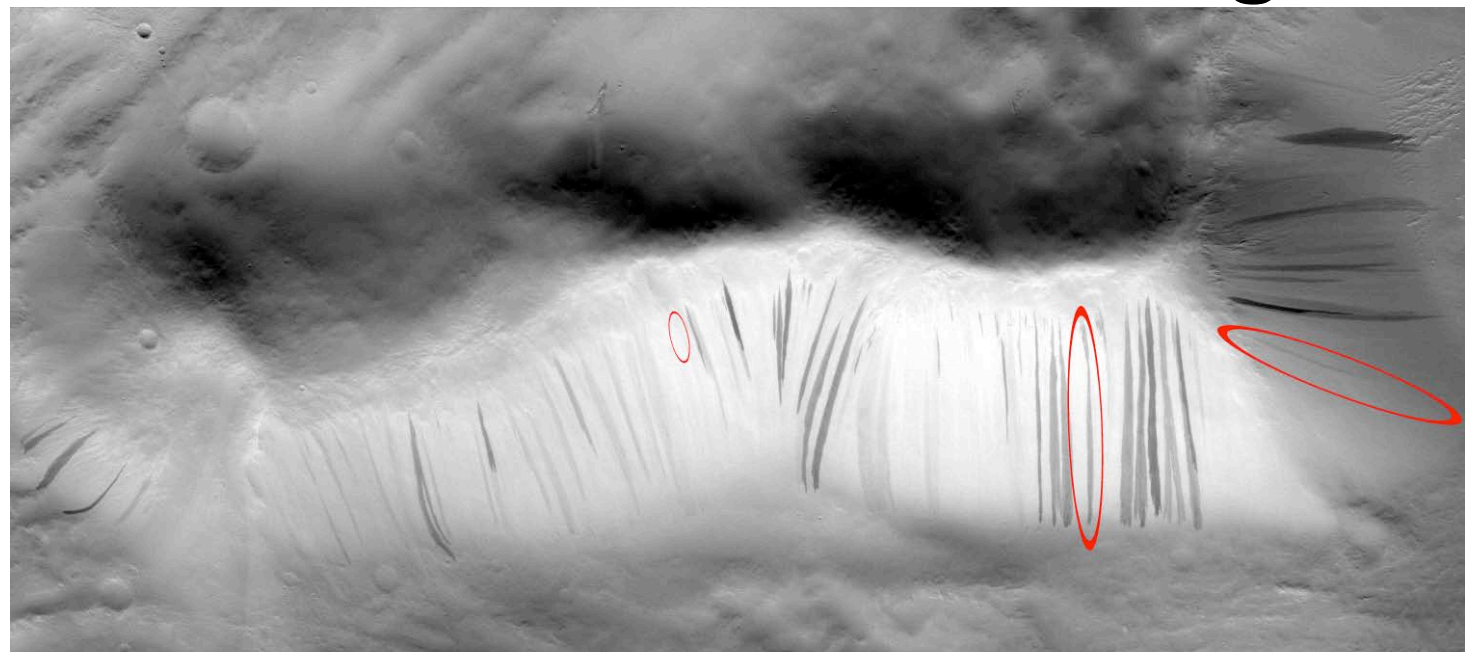
Glacial

Chemical

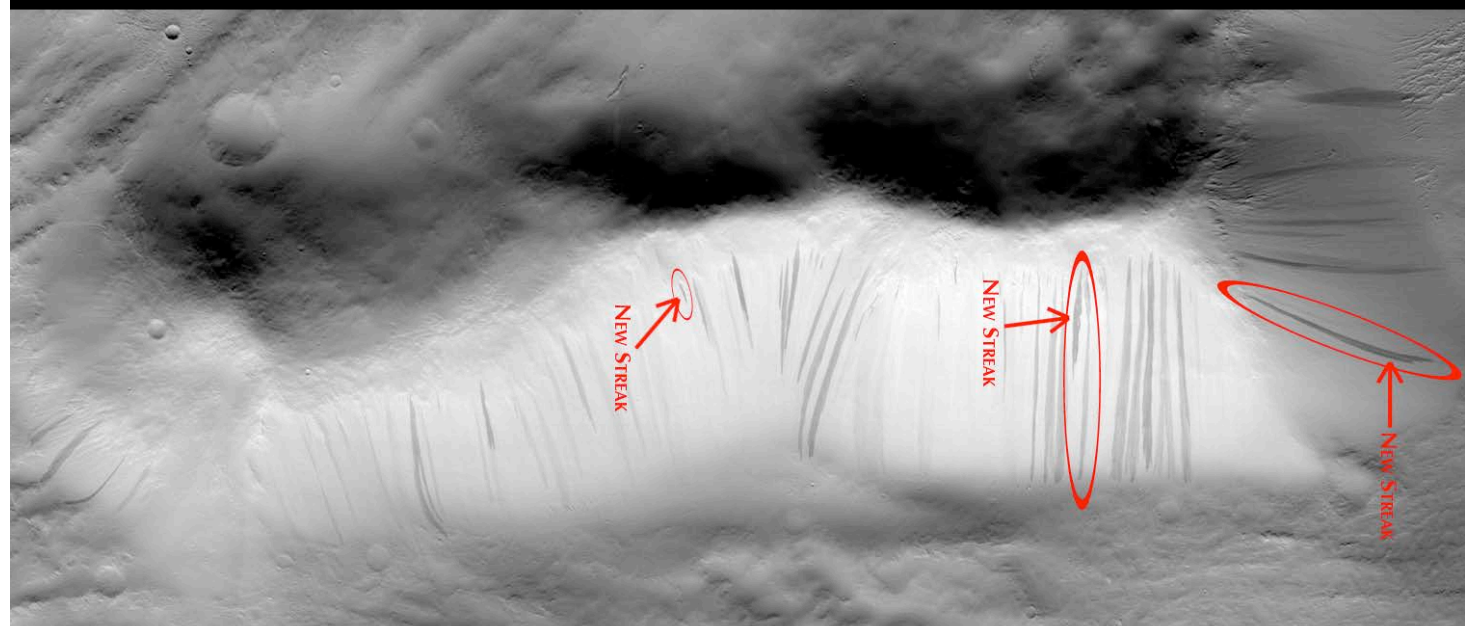
weathering



Mars dust avalanches forming, fading



MOC E04-01817

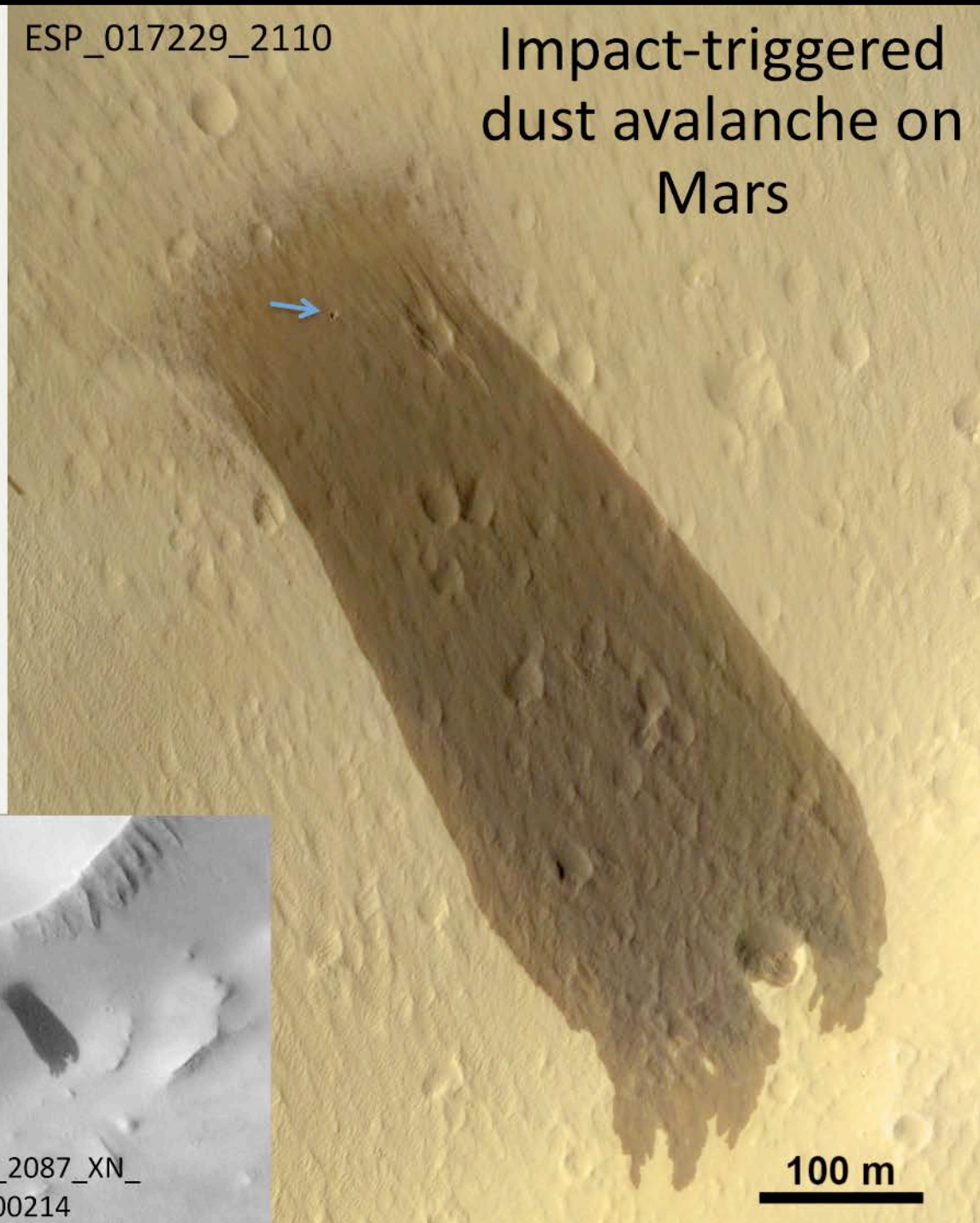


HiRISE PSP_002396_1900

MRO's Context camera (CTX) acquired the image at lower left on Nov 18, 2007 and the adjacent image on Feb 14, 2010, showing a large new slope streak in the aureole (giant landslide deposits) of Olympus Mons. Slope streaks (dust avalanches) are common on Mars but this one is unusually wide and it began from an unusual extended/fuzzy source area. HiRISE acquired the follow-up image (right) March 31, 2010, revealing a small, pristine impact crater (blue arrow) in the fuzzy source area, which resembles the airblast patterns seen at many other new (recent year) impact sites. We conclude that an impact event occurred sometime between the dates of the CTX images and triggered a large dust avalanche.

ESP_017229_2110

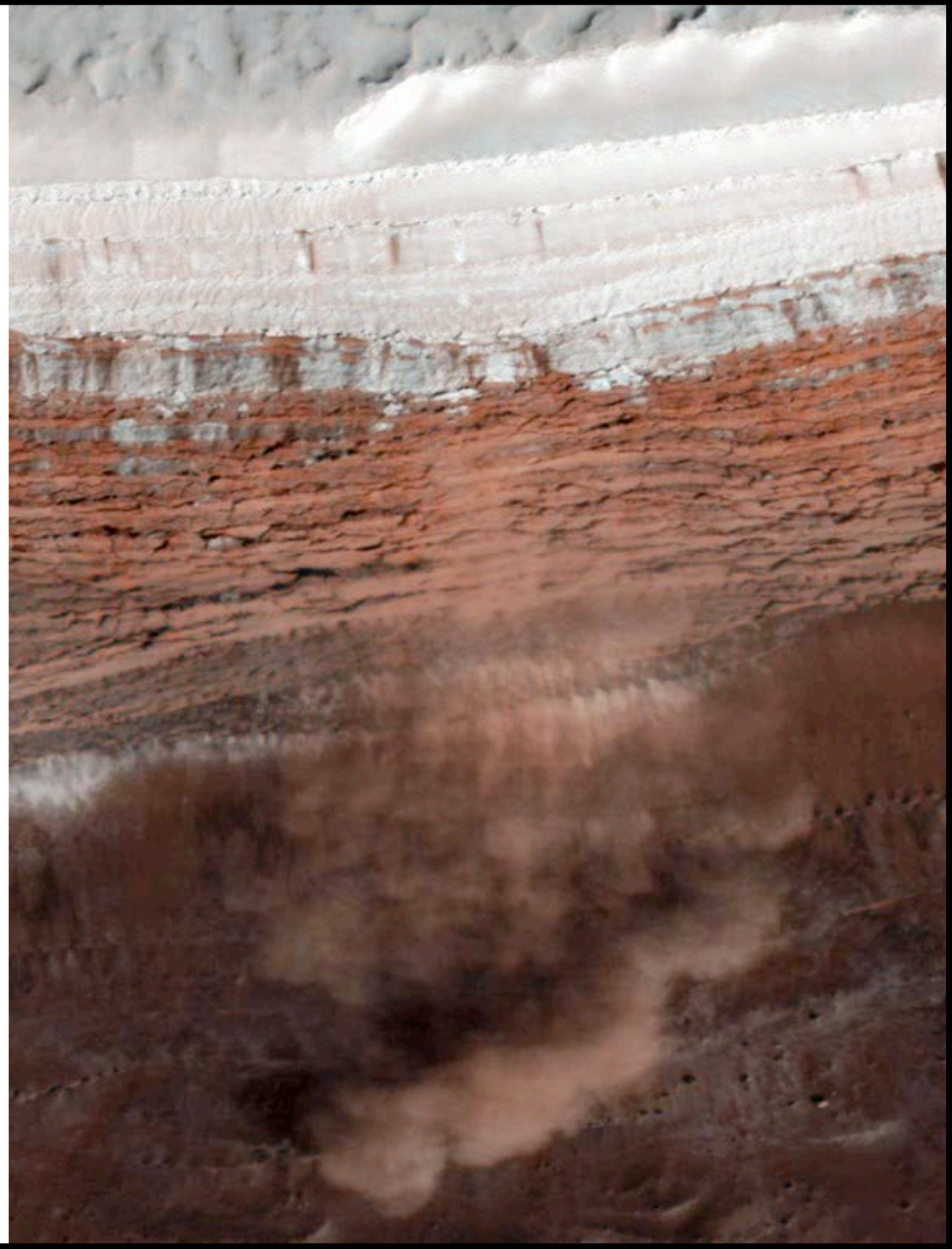
Impact-triggered dust avalanche on Mars



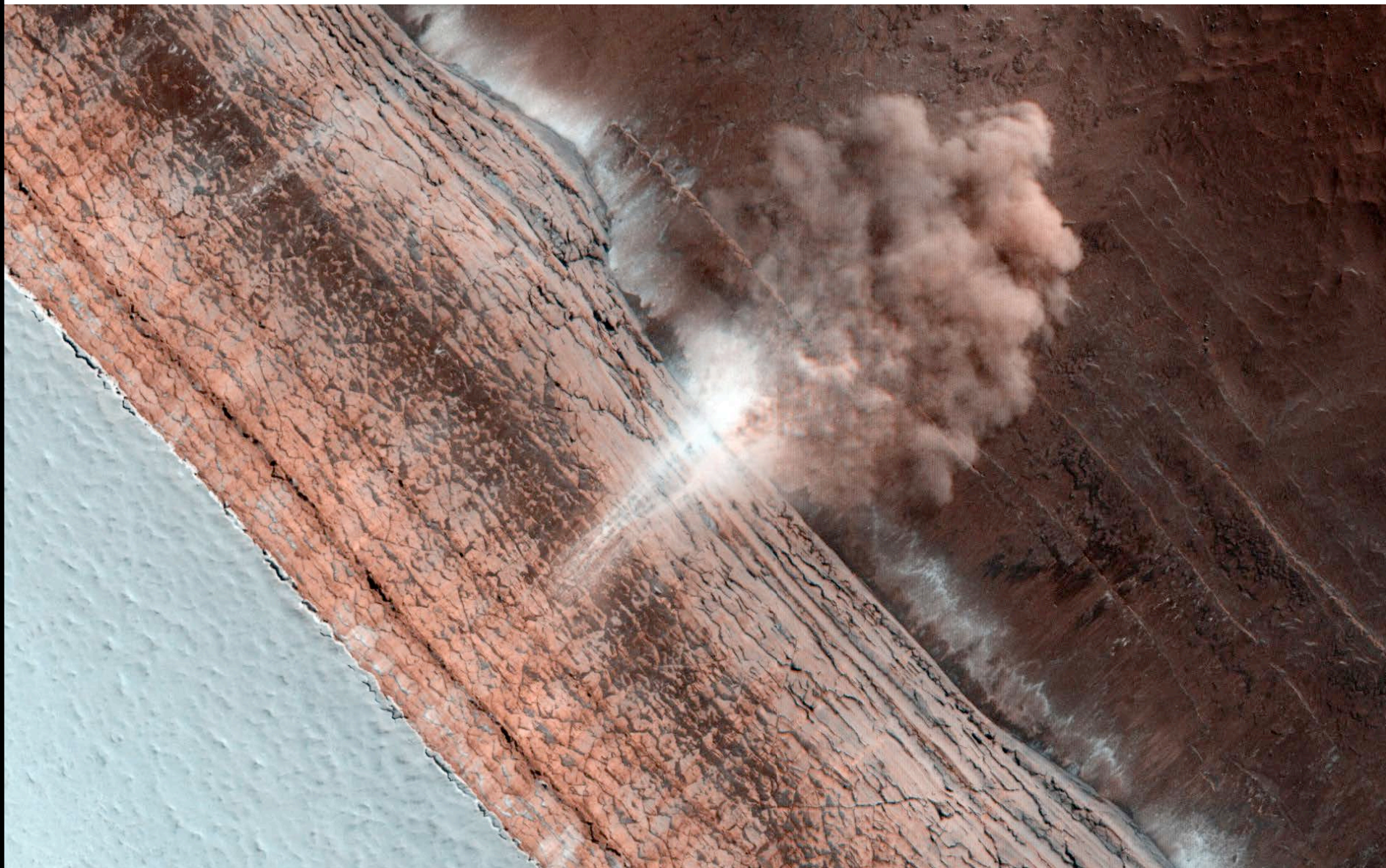
100 m

Polar avalanches on Mars

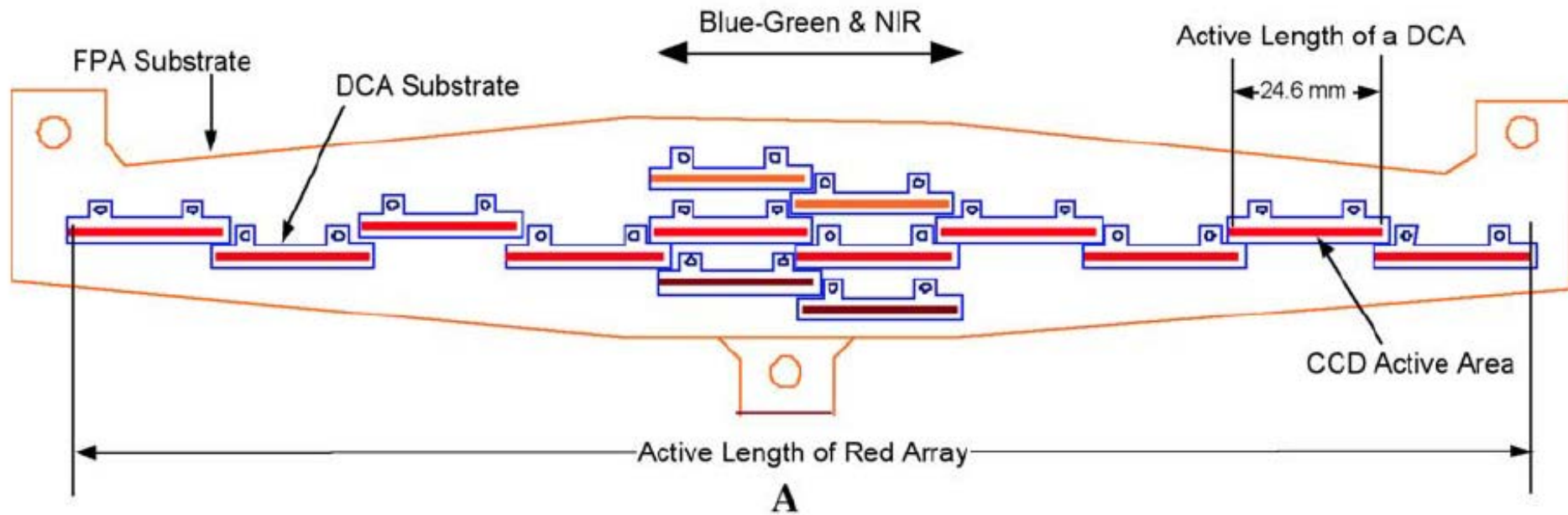
- Occur on slopes $>40^\circ$
- Only in early/mid spring



Polar avalanches on Mars

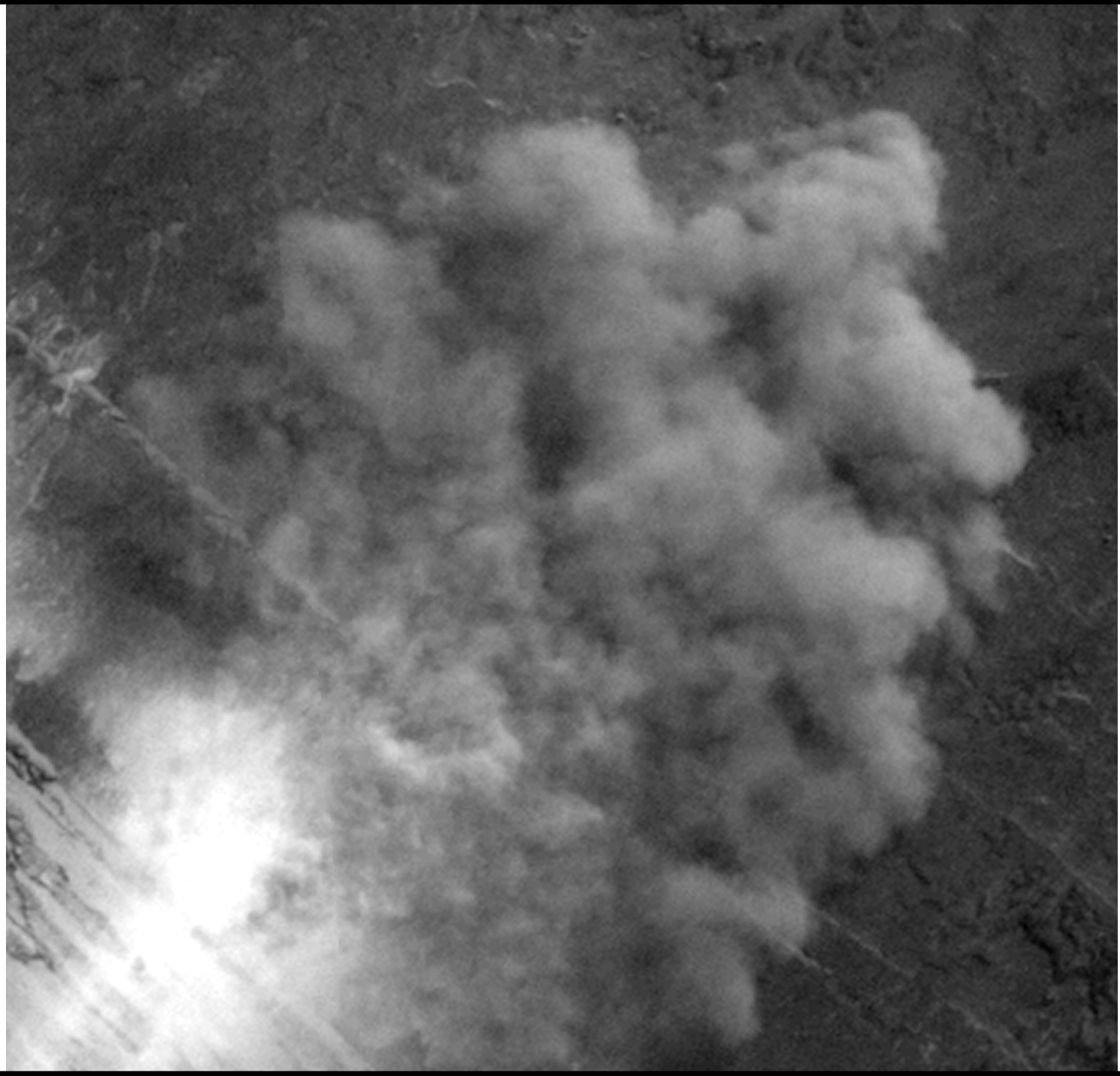


HiRISE focal plane array



Slight time difference in IR vs. red vs BG images...

IR



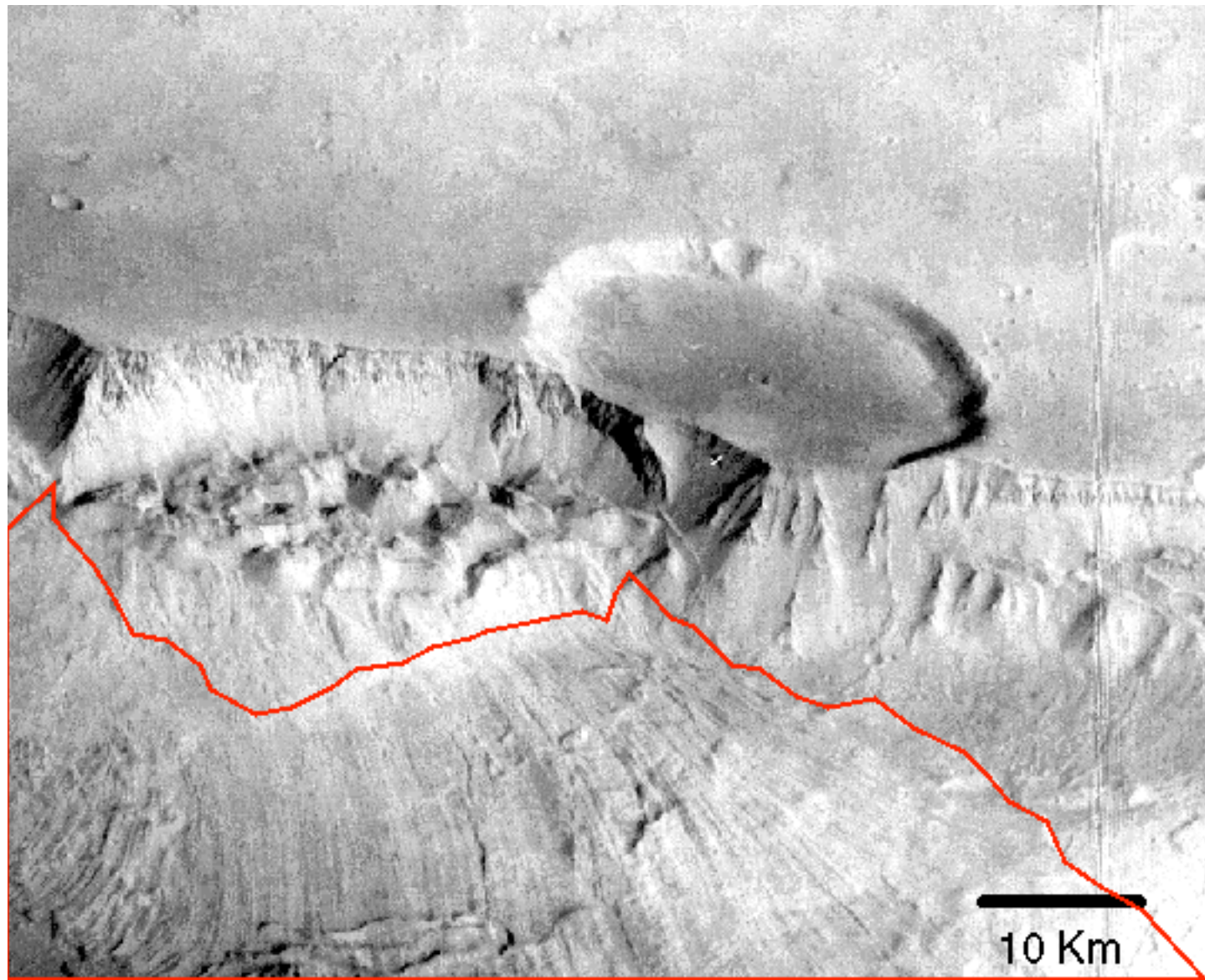
RED



BG



Landslides in Valles Marineris



Landslide on Iapetus

