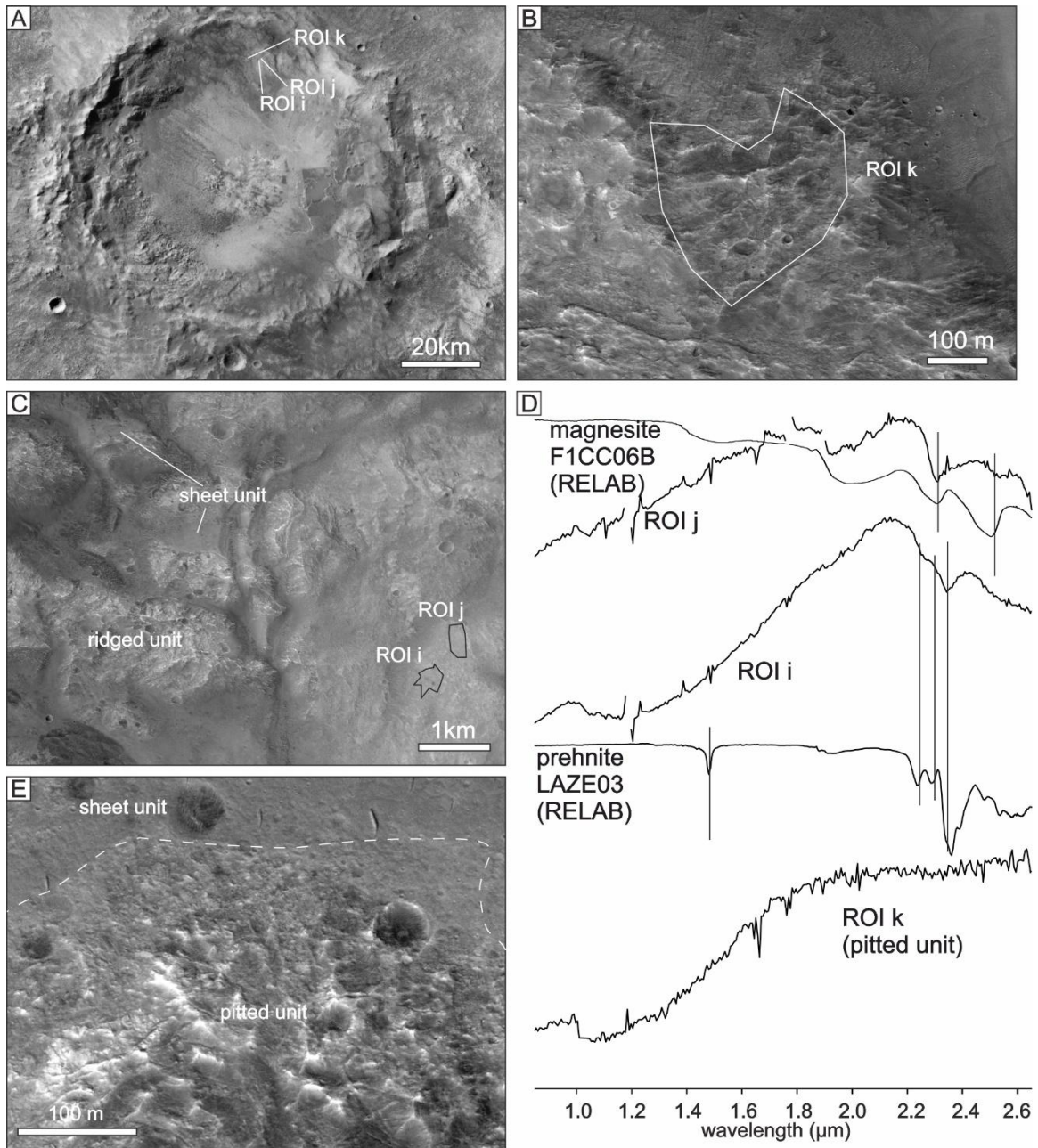
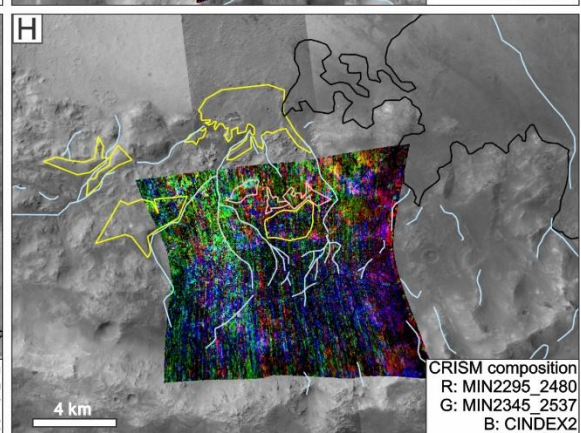
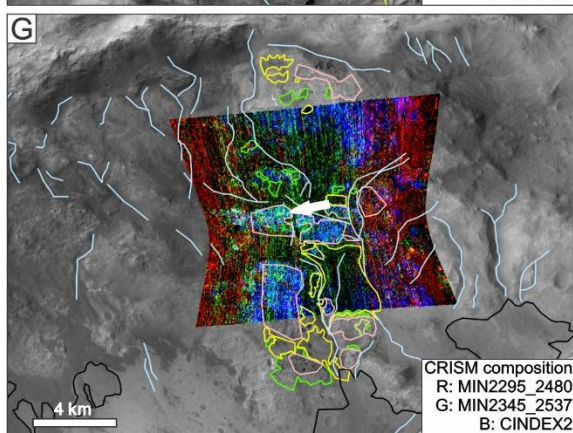
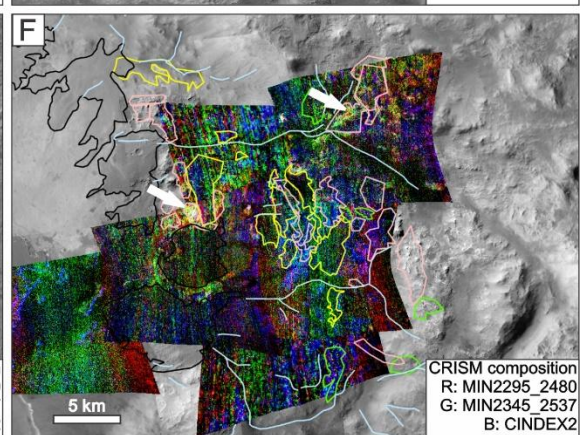
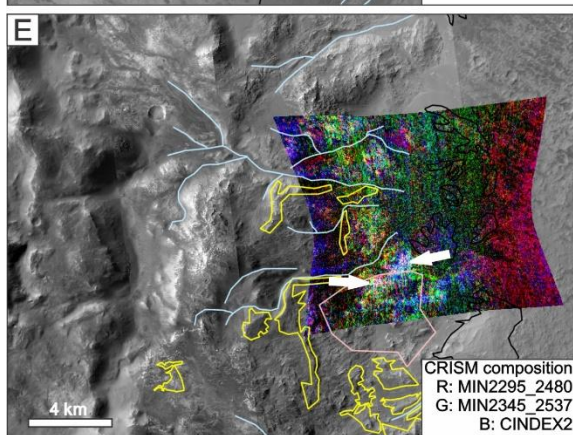
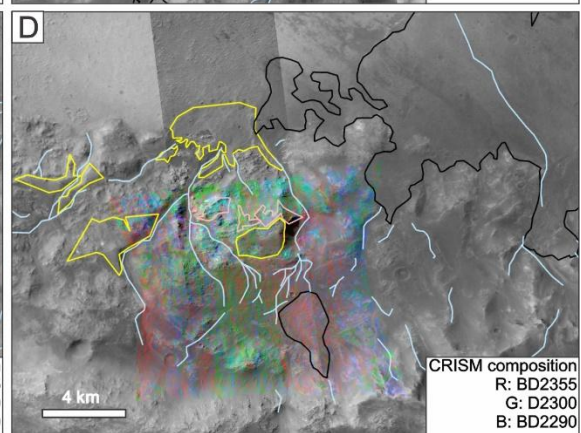
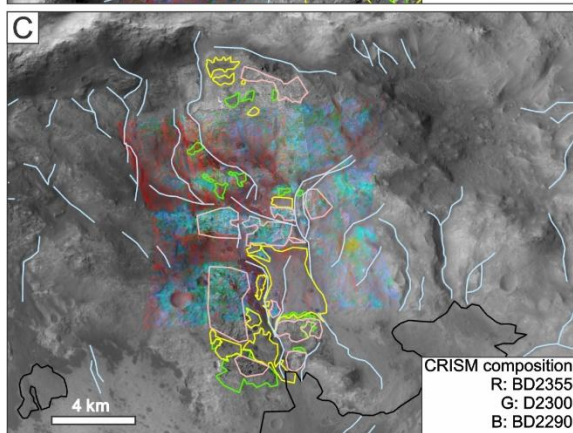
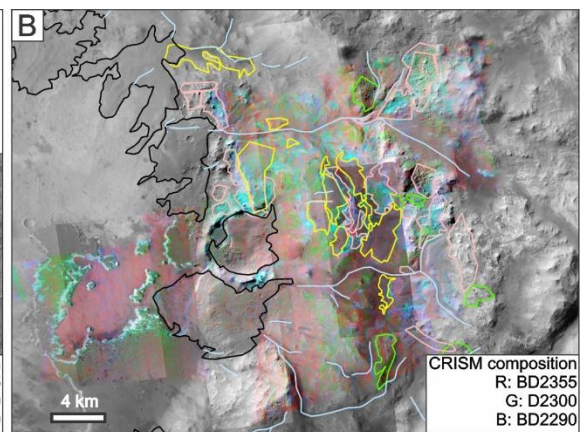
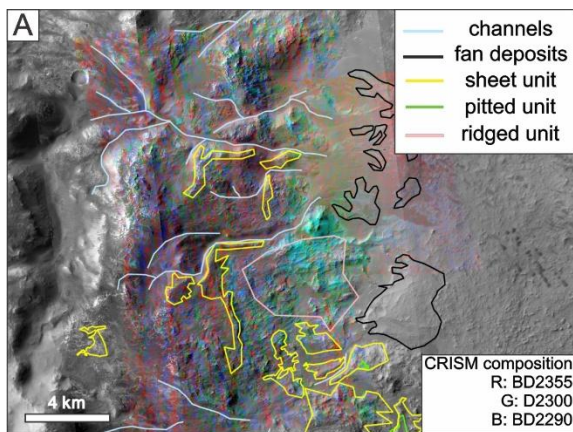




Supplementary Figure S1. Additional region of interests (ROIs) for CRISM spectral analysis. (A) location of the ROIs. (B) ROI of pitted unit. (C) ROI of altered basement: carbonate (ROI j) and prehnite (ROI i). (D) CRISM spectra of additional ROIs. (E) The boundary between the sheet unit and pitted unit.



Supplementary Figure S2. CRISM phyllosilicate browse product (PFM) overlayed on CTX basemap and mapping results of sheet unit, pitted unit and ridged unit, channels and fan deposits on the western (A), eastern (B), northern (C) and southern (D) crater rim. Fe-Mg phyllosilicates are shown in cyan. E to G are the same perspectives of A to D, but overlapped with CRISM carbonate browse product (CR2). Carbonates are shown in cyan, green and white.