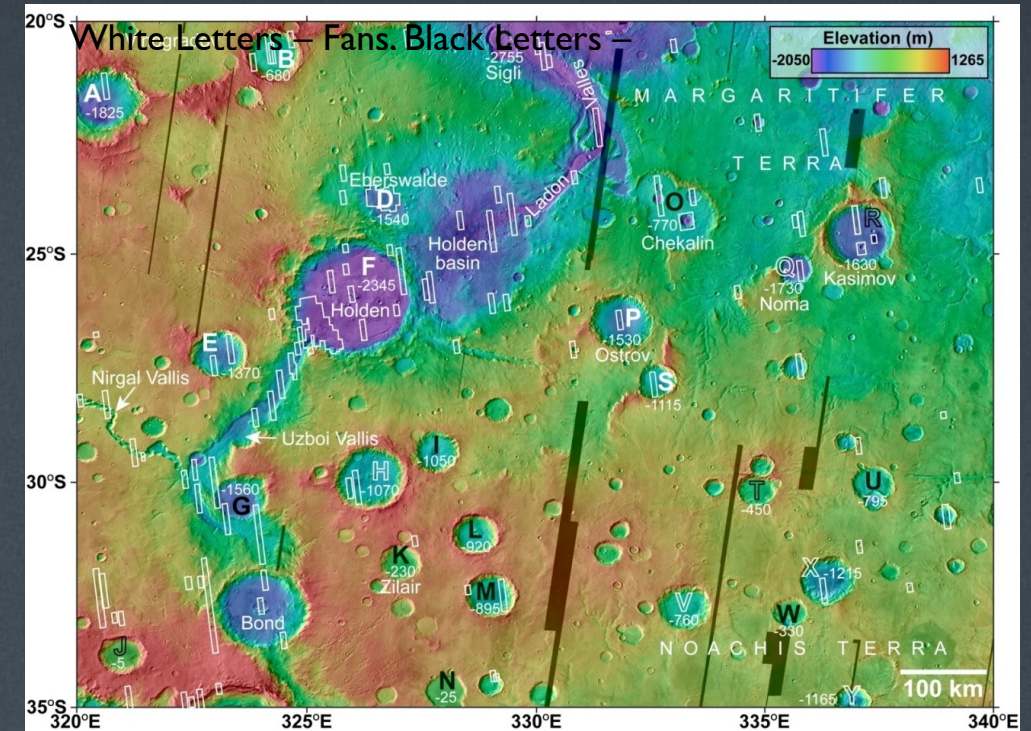
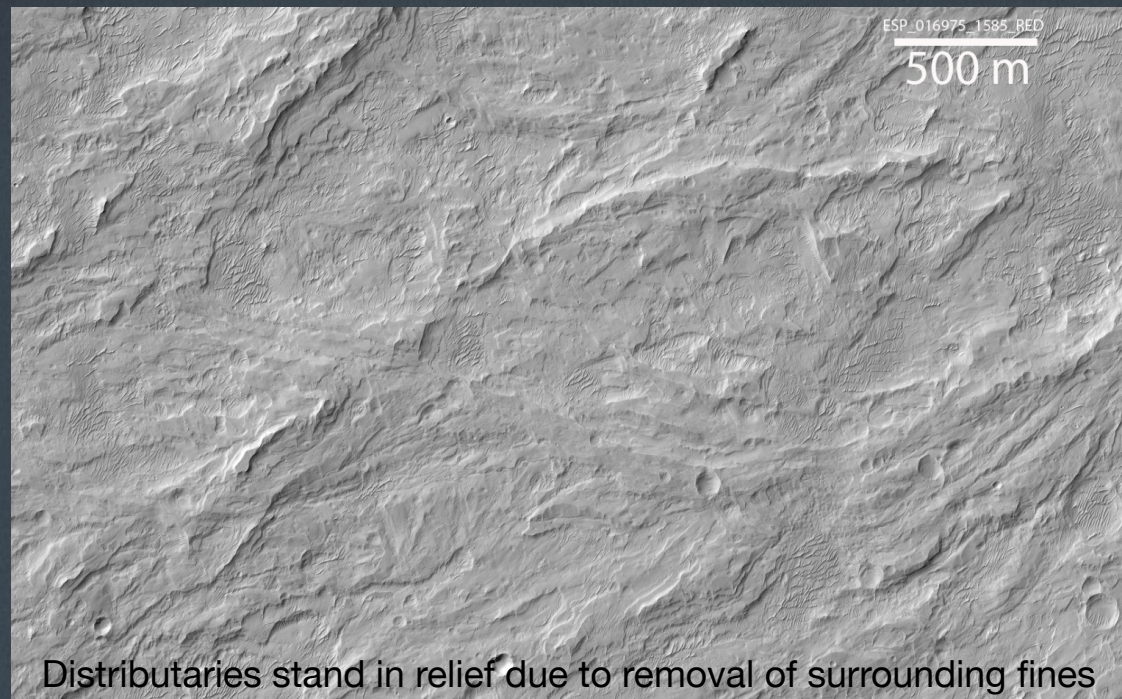


Deciphering Crater-bound Alluvial Fans in Margaritifer Terra



- Numerous alluvial fans and some playa/lake deposits in craters occur at a range of latitudes and elevations and may be as young as Early to mid-Hesperian in age. May correlate with lakes in Uzboi, Holden, Eberswalde.
- Fans are minimally incised, most common in craters with lowest floor elevations and greatest relief between floor and rim (1-3 km), and poorly correlated with azimuth in crater
- Present distribution controlled by where preserved and exposed and not buried beneath younger deposits: fans may have been more widespread
- Erosion of crater rims, absence of lake-like deposits in some craters suggests limited groundwater, likely requires synoptic precipitation perhaps orographically enhanced, but was insufficient to deeply incise fan surfaces
- Morphology points to precipitation that started and ended abruptly (Moore and Howard 2005; Kraal et al., 2008). Regional record is among best preserved on Mars and correlates with increased degradation in the late Noachian inferred by Irwin et al., 2005; Wray et al., 2009, and maybe well into the Hesperian