

Timing and Origin of Compressional Tectonism in Mare Tranquillitatis

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Contents of this file

Figures S1 to S3

Introduction

The following supporting materials include color-blindness-friendly versions of figures 2, 3, and 12.

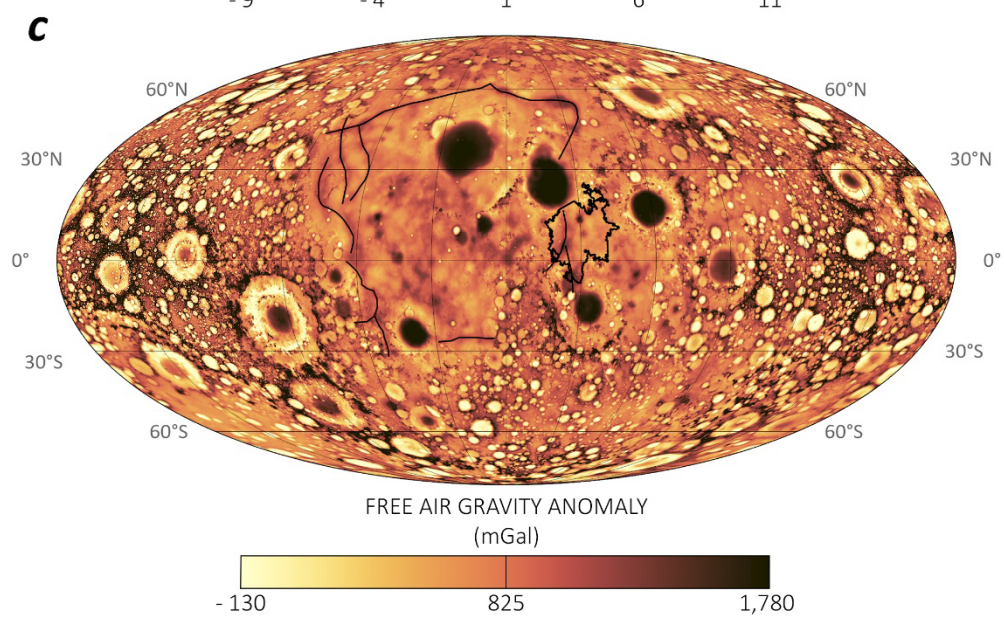
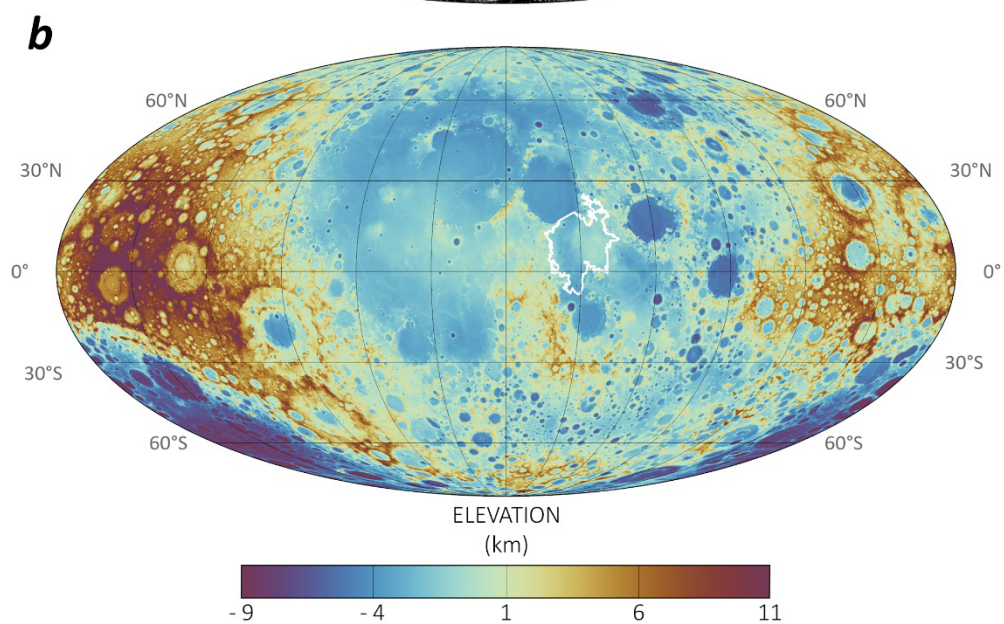
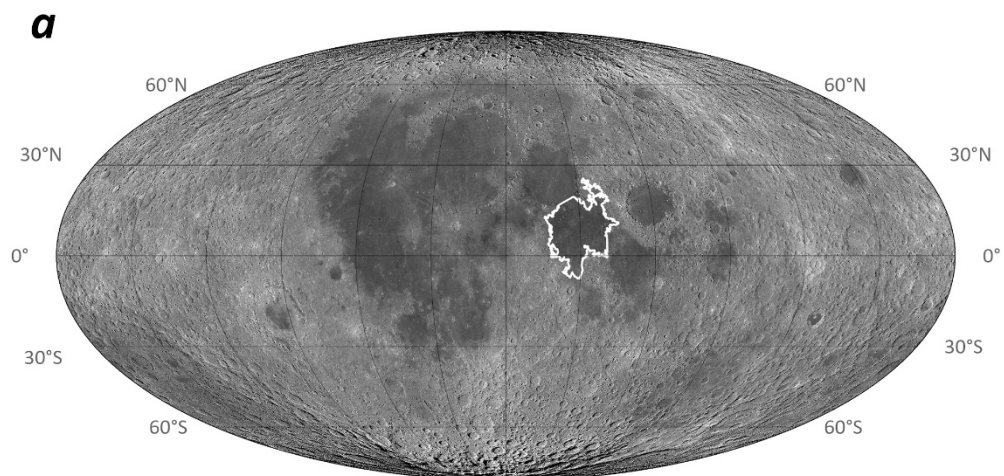


Figure S1. a) Location of Mare Tranquillitatis (white outline; Nelson et al., 2014) near the lunar equator projected onto the global merged WAC mosaic. b) Mare Tranquillitatis (black outline) projected onto the LRO LOLA – SELENE Kaguya DEM (Neumann, 2009; Barker et al., 2016). c) The black outline of Mare Tranquillitatis projected onto the GRAIL Free Air Gravity map (Kahan, 2013; harmonic degree and order of 660). The black lines sketch the proposed quasi-rectangular pattern of ancient intrusion (after Andrews-Hanna et al., 2012).

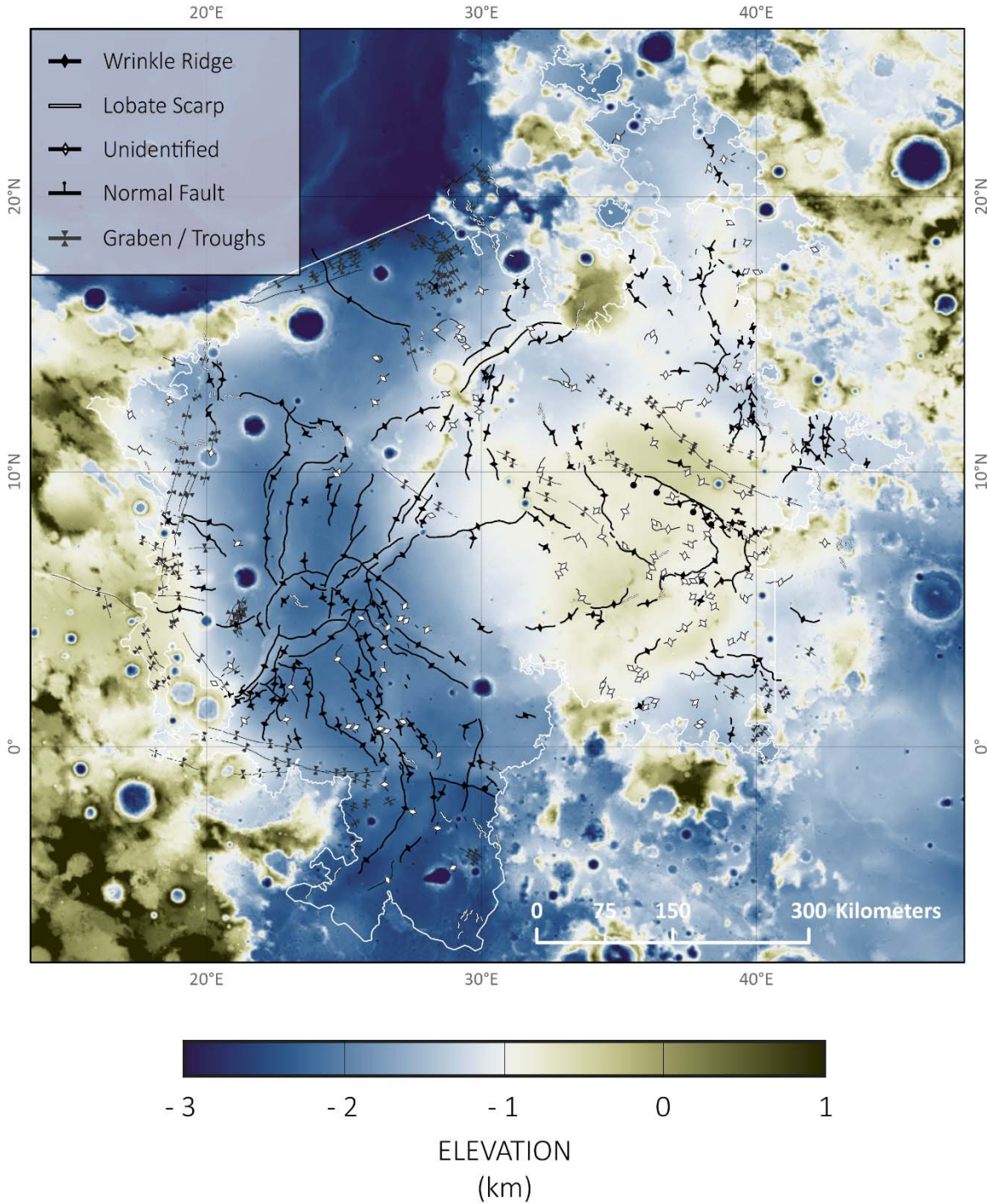


Figure S2. Tectonic map of Mare Tranquillitatis projected on the merged LRO LOLA – SELENE Kaguya DEM (Barker et al., 2016). Parts of the lobate scarp cluster in the northern mare cross the highland boundary and continue into Mare Serenitatis near the Taurus-Littrow valley. Unidentified features are linear positive topographic features with a possible but unproven tectonic origin (other possible origins are, e.g., dikes, lava flows, surface expressions of buried structures, or ejecta remnants).

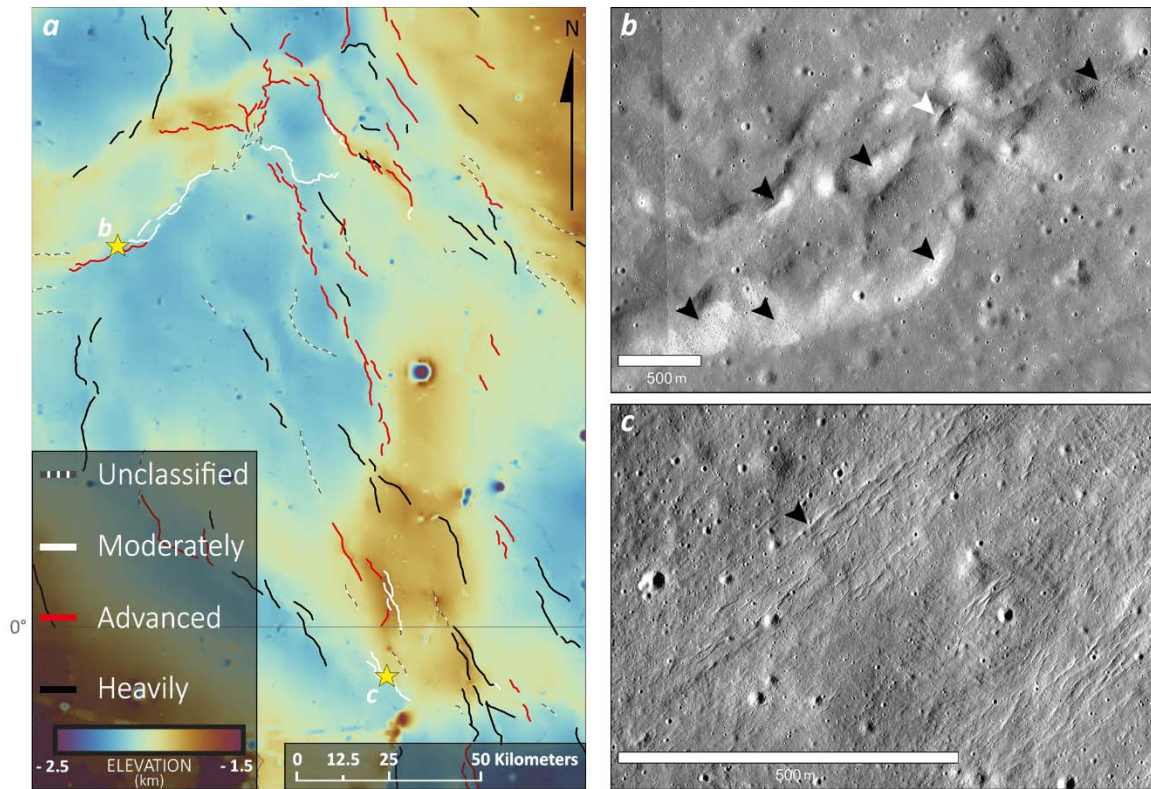


Figure S3. Evidence for recent activity by ancient wrinkle ridges in Mare Tranquillitatis. (a) Shows the topographic map of the region southeast of the Lamont anomaly. The stars mark the locations of (b) and (c). (b) Shows NAC image (M1108125194LE; 3.43°N, 23.97°E) showing a part of a concentric wrinkle ridge at the southeastern Lamont anomaly. It crosscuts craters with ~100 m in diameter (white arrow) and exhibits several boulder fields (black arrows). (c) NAC image (M162134363LE) of faint graben-like features on the hanging wall of a wrinkle ridge (0.45°S, 26.47°E).