**Supplementary Material 1**

Data products used in the study

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| **Data Type** | **Mission** | **Accessible at** | **Product ID** | **Spatial Resolution** |
| MOLA DEM | Mars Global Surveyor | <https://astrogeology.usgs.gov/search/map/Mars/Topography/HRSC_MOLA_Blend/Mars_HRSC_MOLA_BlendDEM_Global_200mp> |  | 10–20 m/pixel |
| HiRISE image | Mars Express | <https://www.uahirise.org/hiwish/browse> |  | ~0.25 m/pixel |
| HRSC image | Mars Express | <https://pds-geosciences.wustl.edu/missions/mars_express/hrsc.htm> |  | 15-20 cm/pixel |
| CTX image | Mars Reconnaissance Orbiter | <https://murray-lab.caltech.edu/CTX/index_beta.html> |  | ~6 m/pixel |
| CRISM data products | Mars Reconnaissance Orbiter | <https://pds-geosciences.wustl.edu/> | FRT000083F4 FRT0001186E FRT00011C67 FRT00017181 | 18 m/pixel |
| Thermal Inertia unit map | Mars Global Surveyor | <https://astrogeology.usgs.gov/search/map/Mars/GlobalSurveyor/TES/Mars_MGS_T> |  | 100 m/pixel |