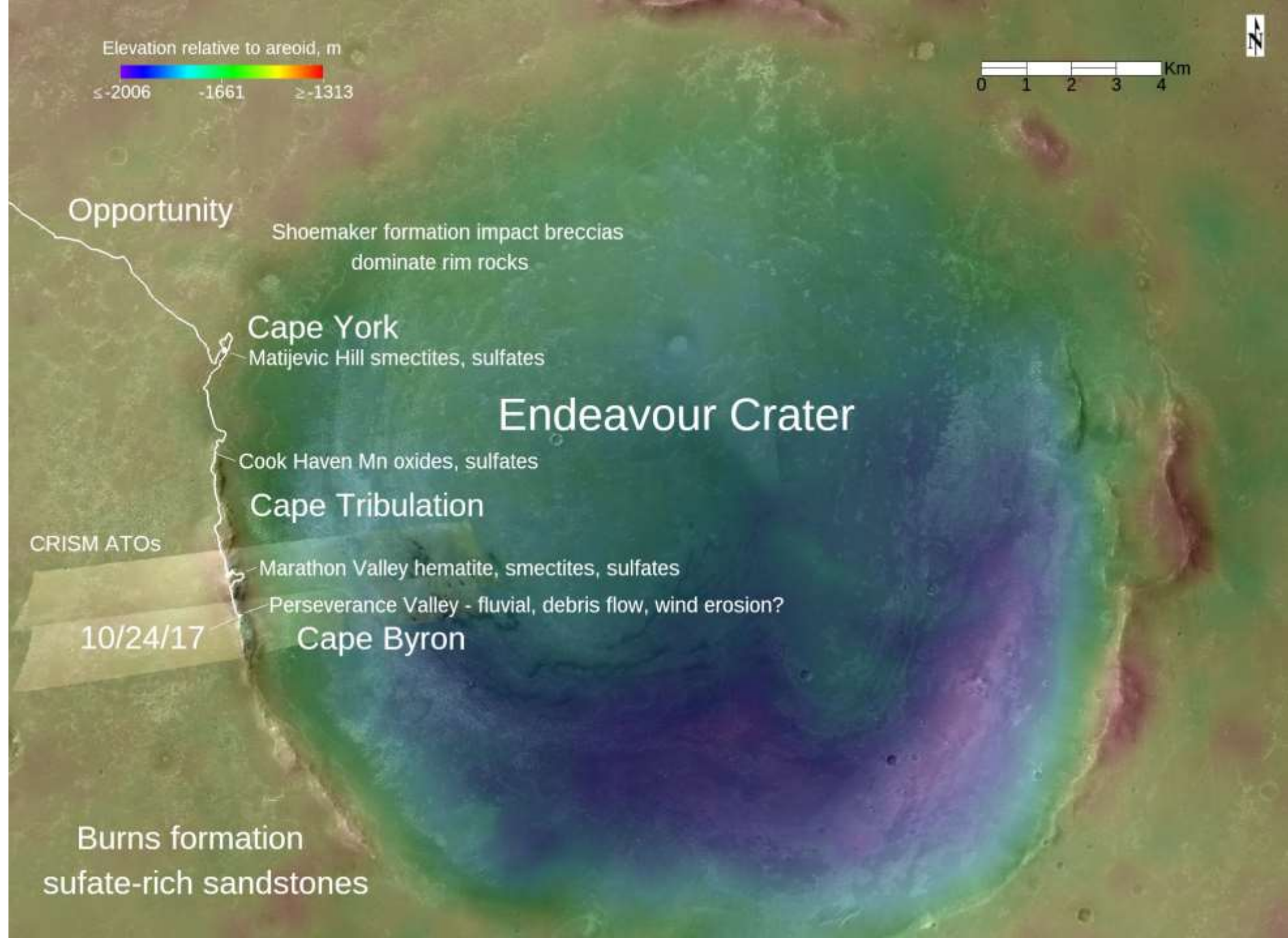


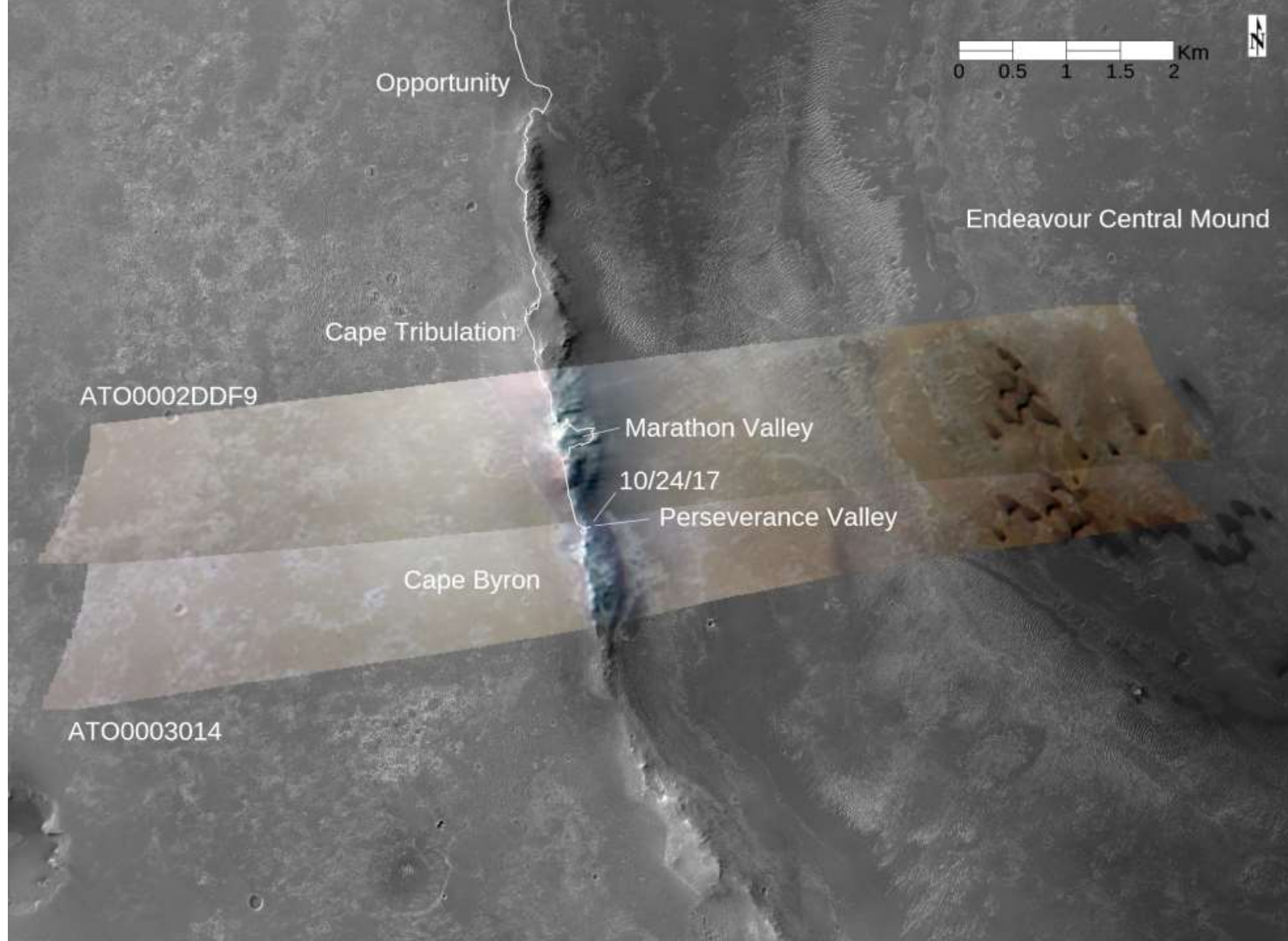
Orbital and Rover-Based Exploration of Perseverance Valley, Endeavour Crater, Mars

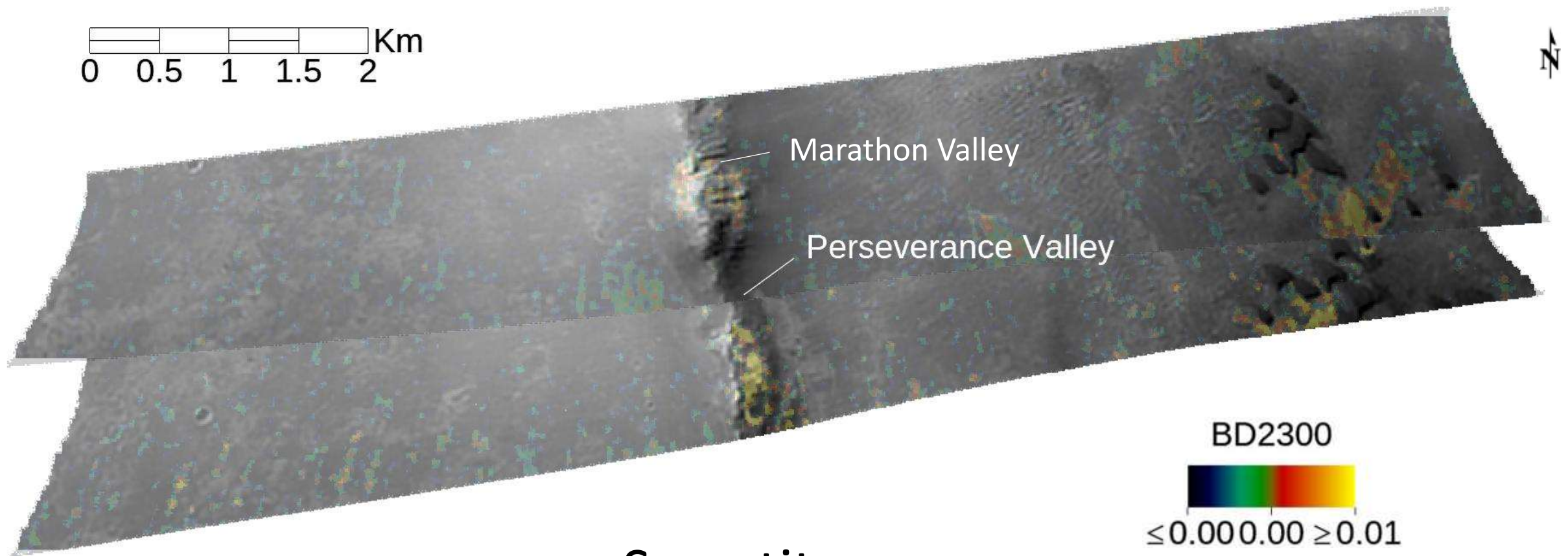
Ray Arvidson and the Athena Science Team

T206: Geomorphology and Landscape Evolution of Mars: The G. K.
Gilbert Session

10/24/17







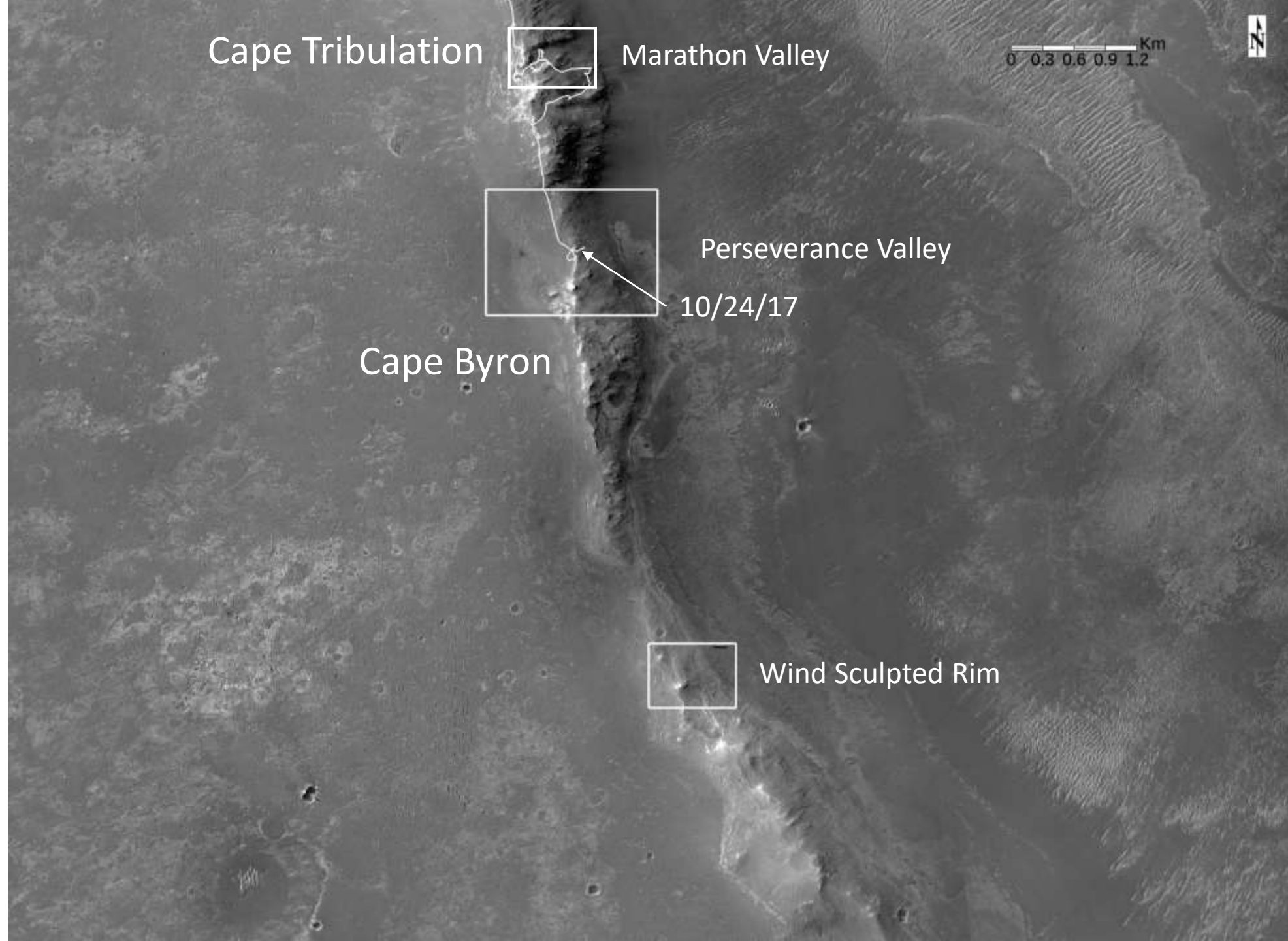
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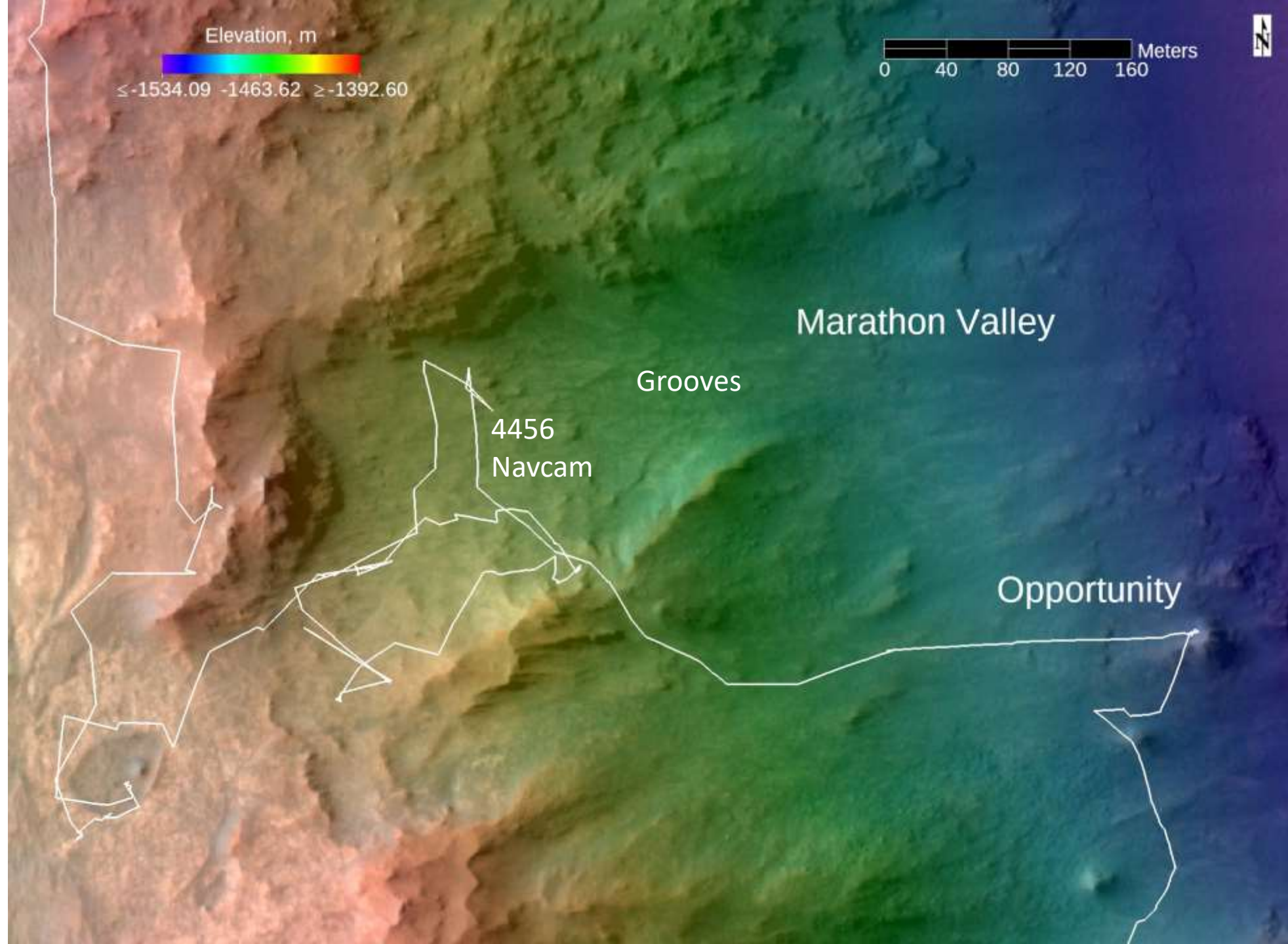


Hydrated Phases



Hydrated Sulfates

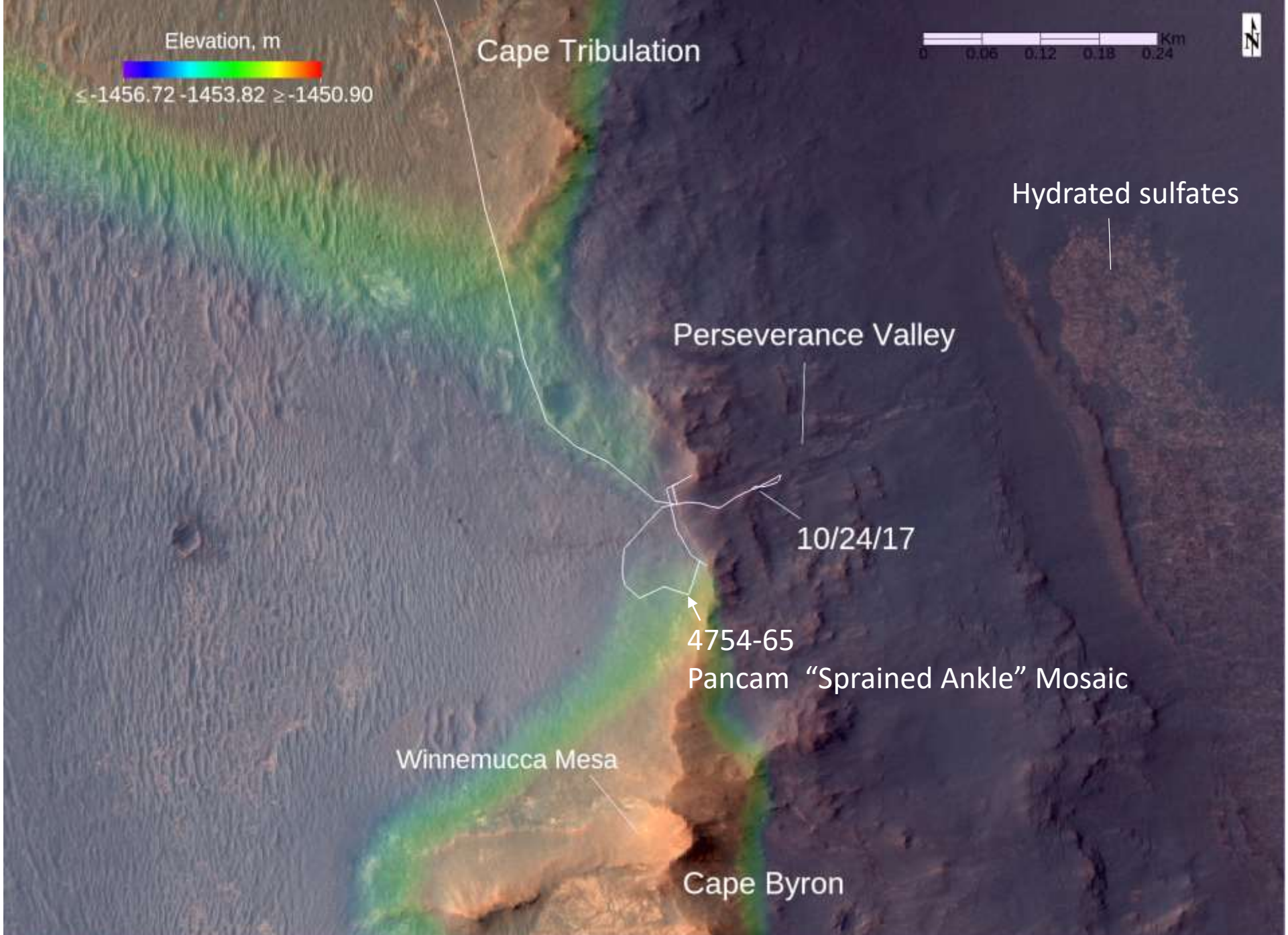


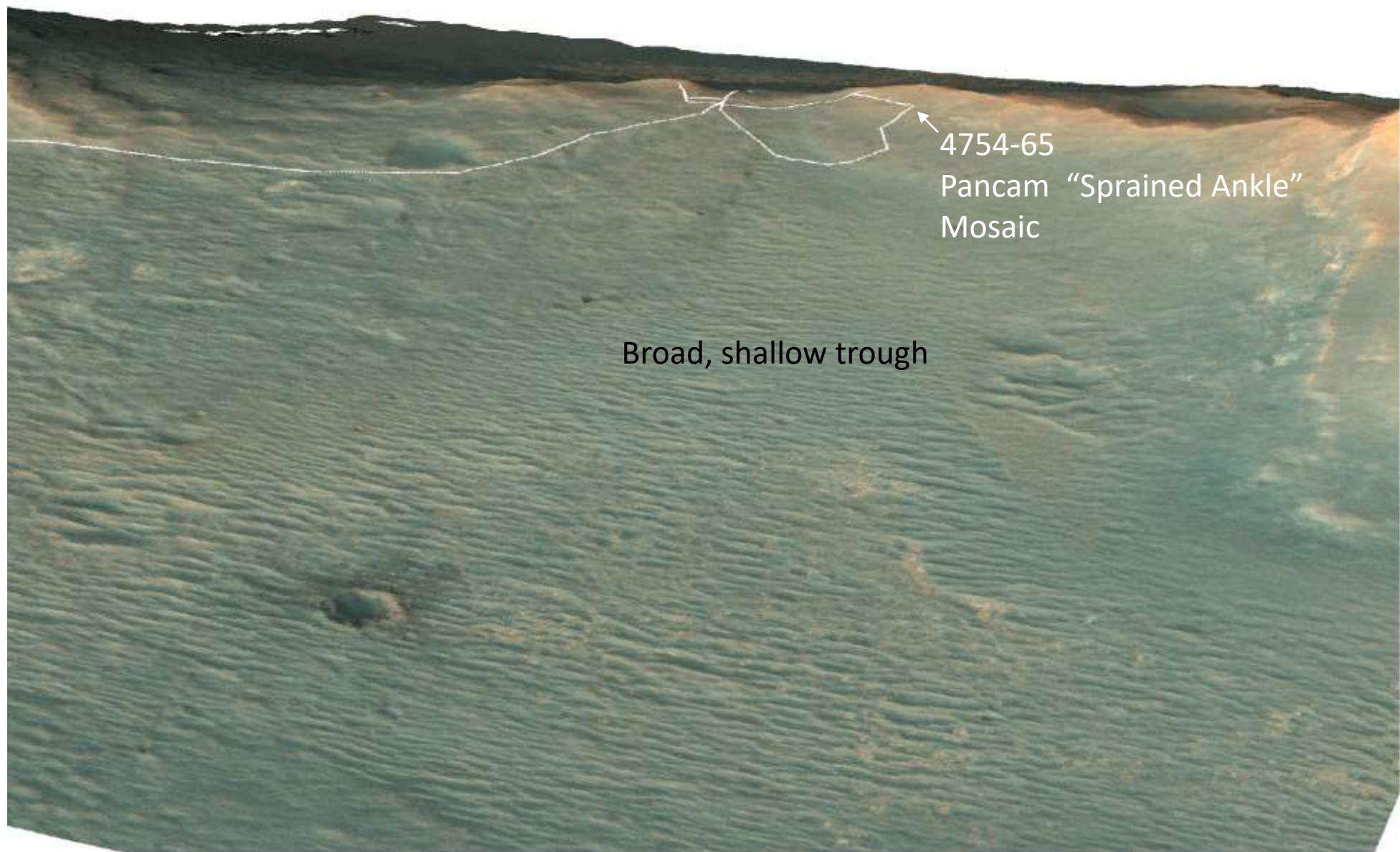


Sol 4456 Navcam Mosaic Looking Down Marathon Valley

Central mound

Grooves due to polygonally fractured bedrock with regolith fill

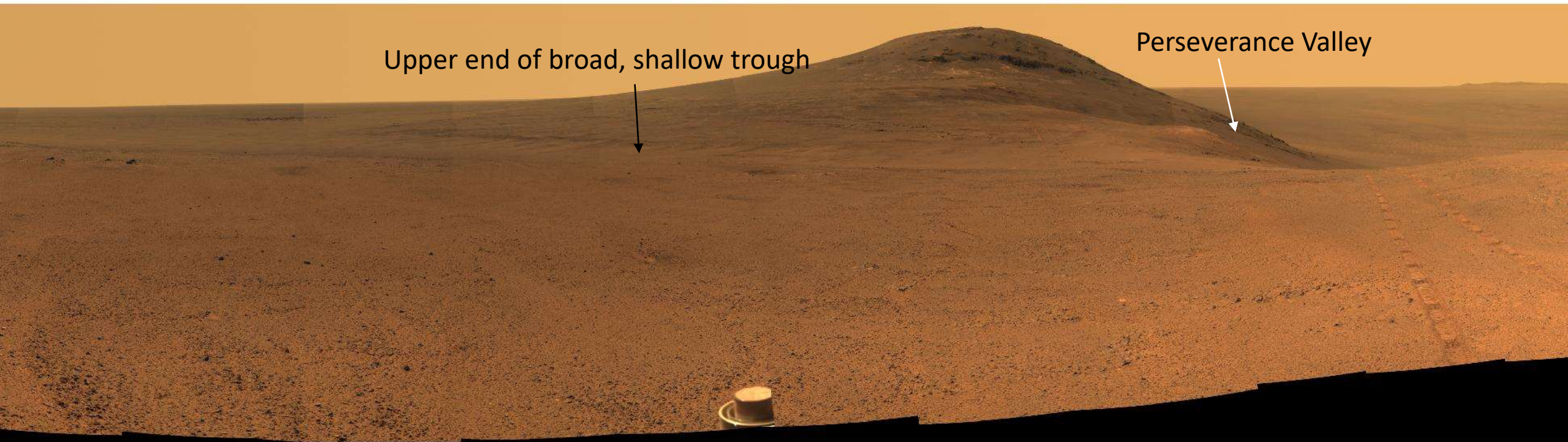




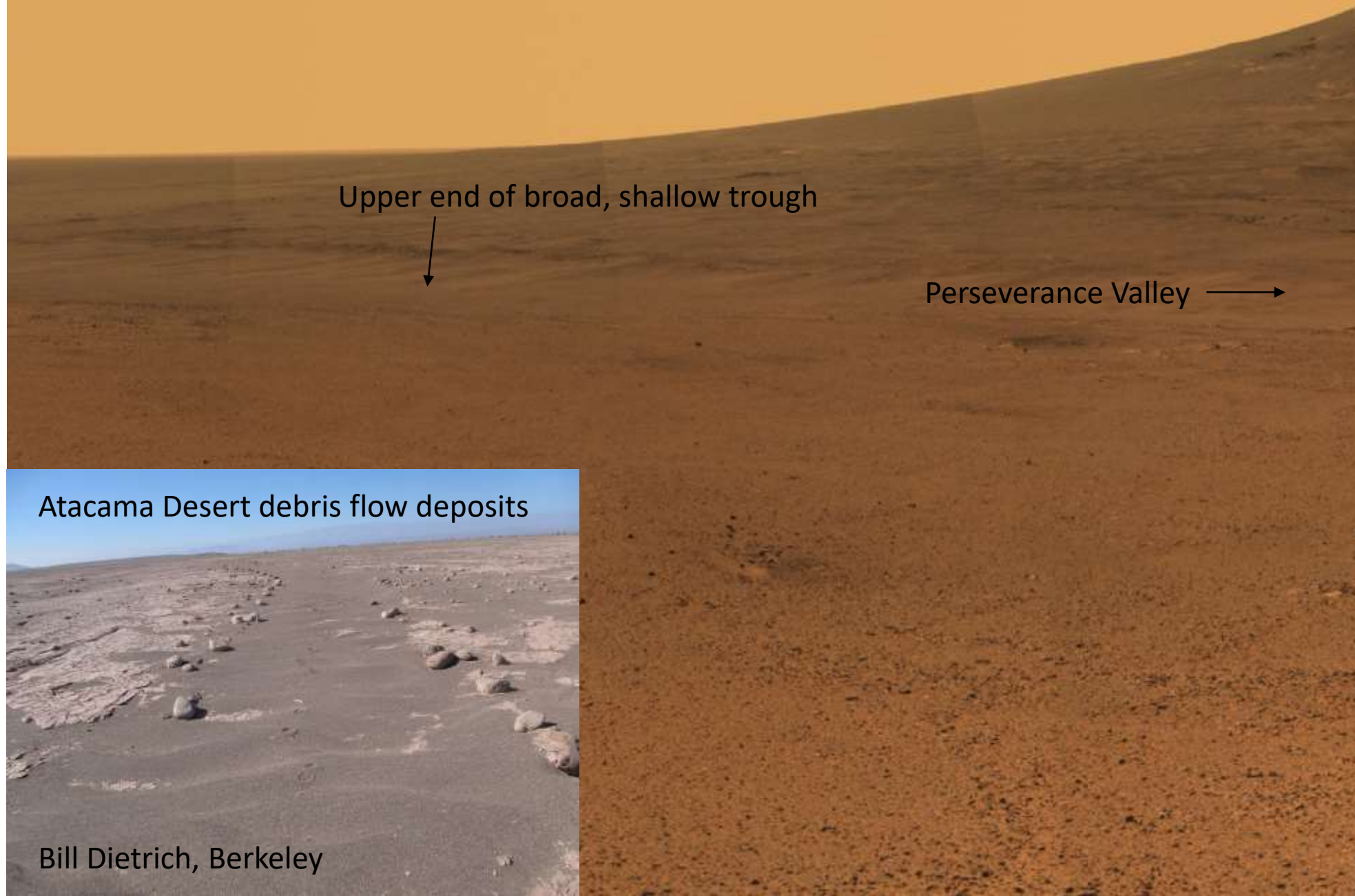
4754-65
Pancam "Sprained Ankle"
Mosaic

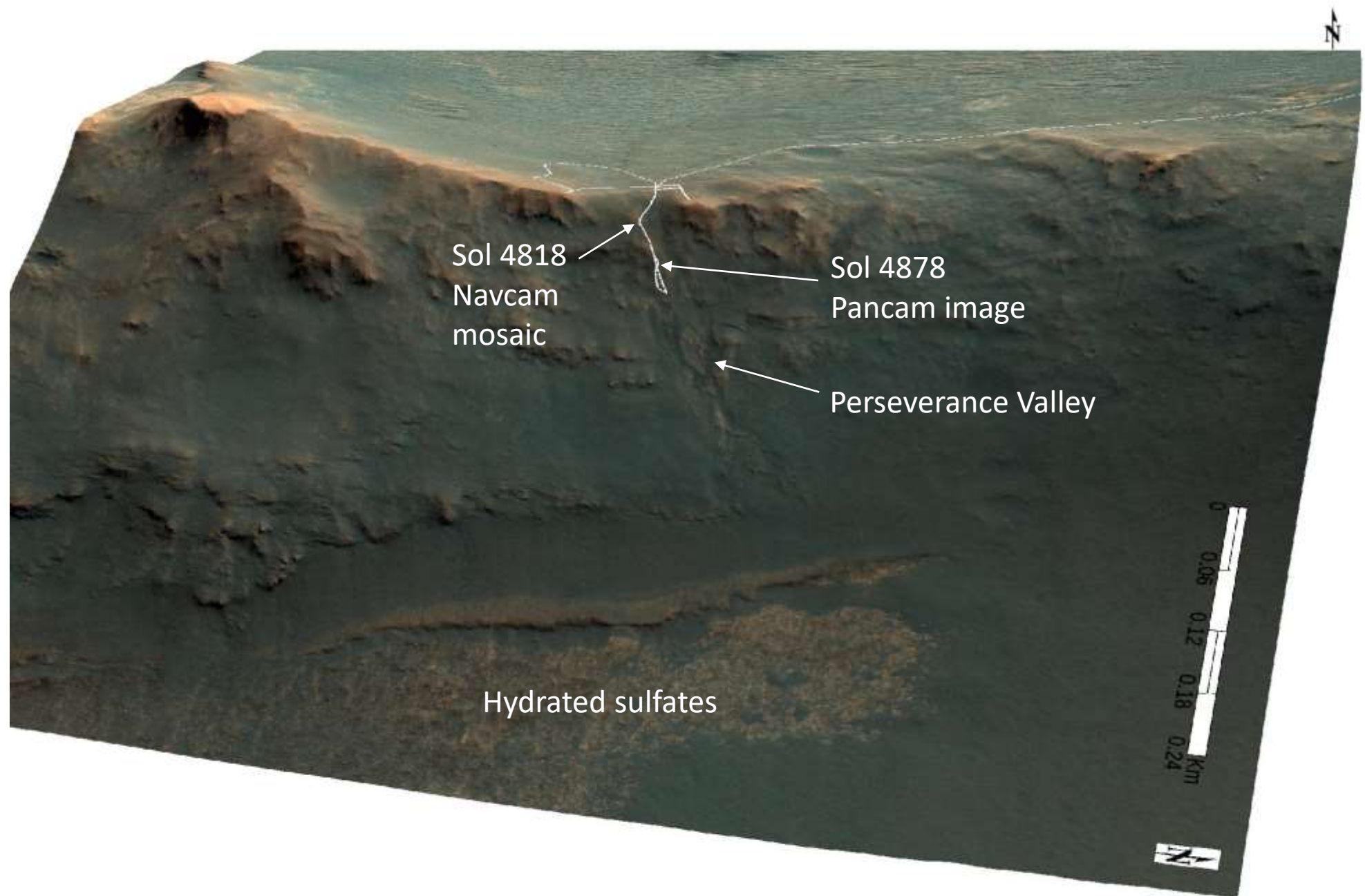
Broad, shallow trough

Pancam Color “Sprained Ankle” Mosaic



Pancam Color “Sprained Ankle” Mosaic



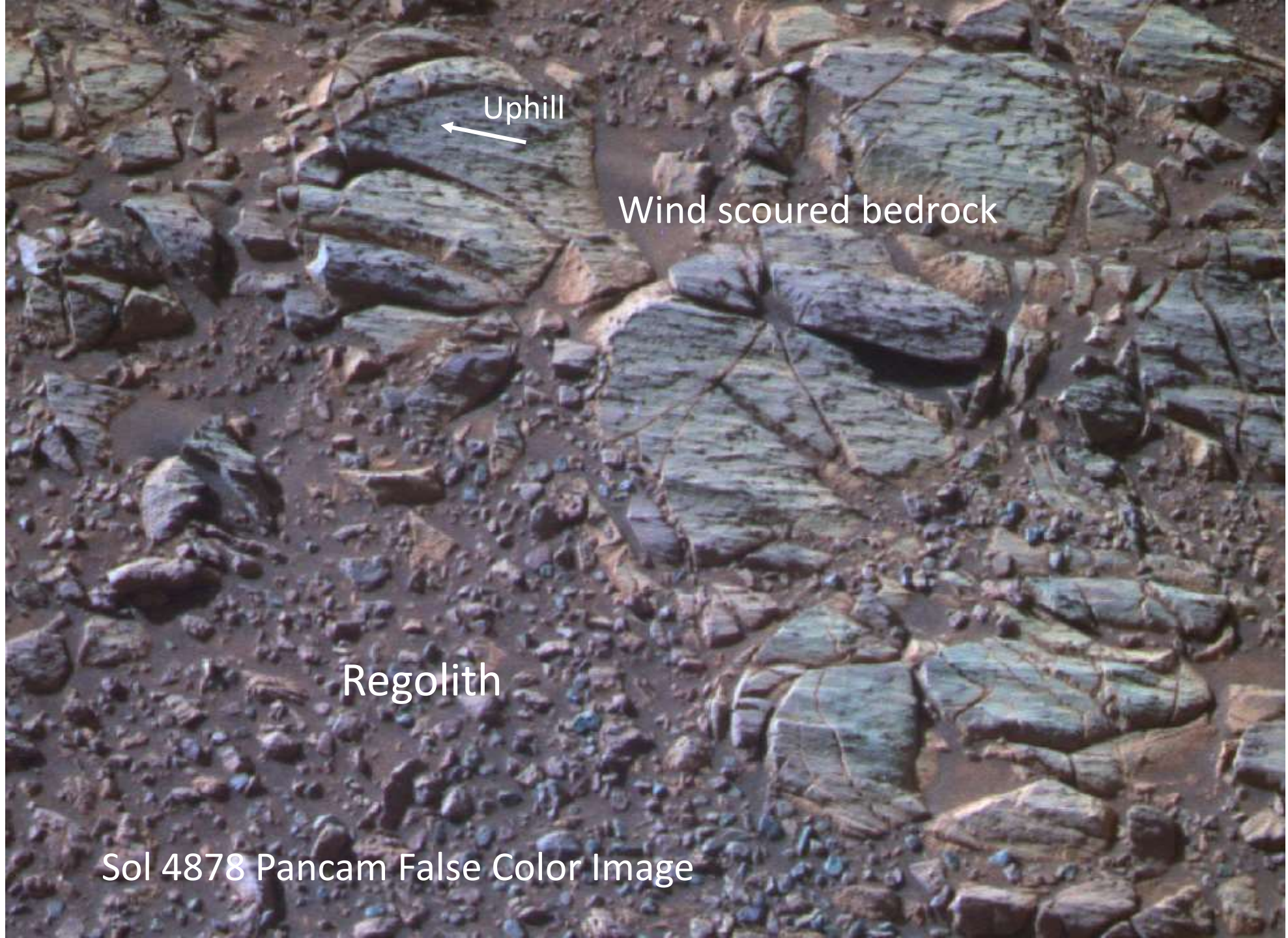


Sol 4818 Pancam Mosaic

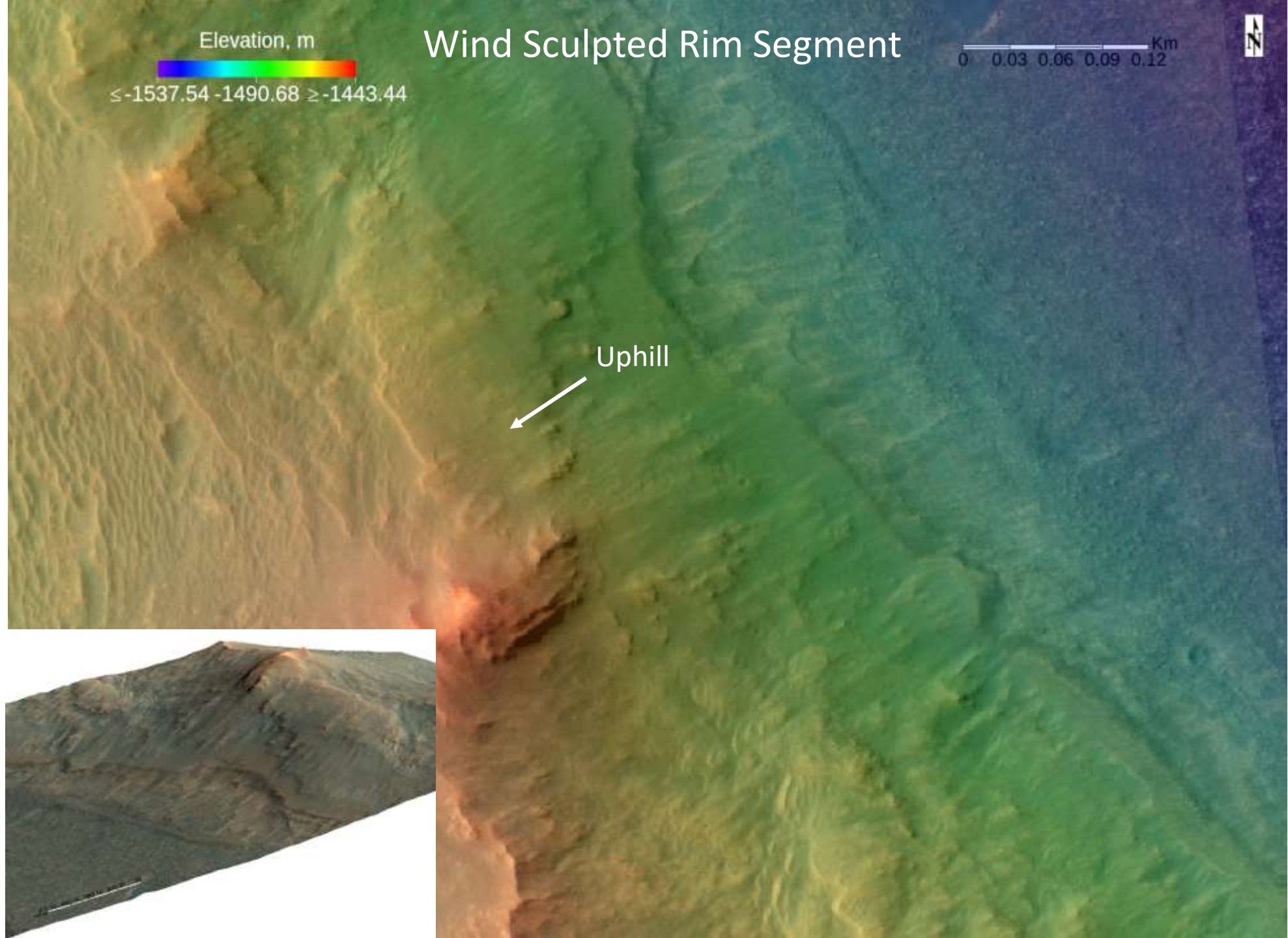
?

Regolith

Scoured bedrock



Sol 4878 Pancam False Color Image



Prince Christian Sound Southern Greenland September 2017



Perseverance Valley

- Field work underway, much remains to be done as rover power increases after 10/31/17 winter minimum
- Channels extend to west and east of rim, no western catchment
- Unique topographic and morphologic settings
- Wind has shaped PV outcrops at cm to 10's cm scales
- Considerable diffusive smoothing and regolith deposits
- *Speculating: Previous climate snowpack accumulation, some melting with fluvial and debris flow activity, drying out, letting diffusive smoothing and wind action dominate*
- But, let us finish the field work and analyze all the data before we come to final conclusions