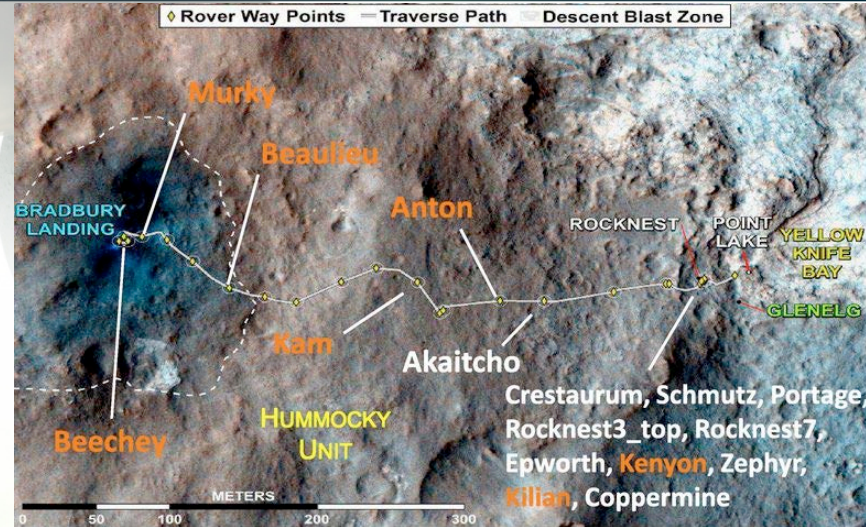


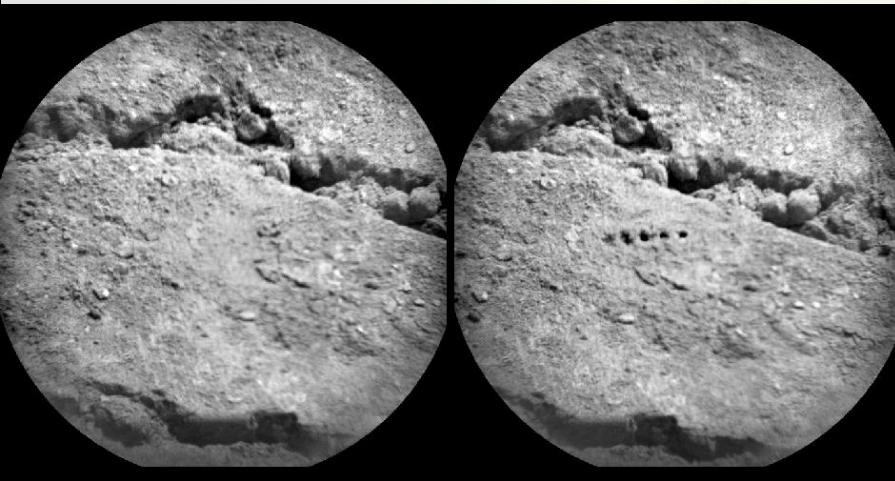
Curiosity Investigates Details About Water in Mars Soil

Curiosity answers longstanding questions about water identified in martian soil by orbiting satellites.

Curiosity studied Mars soil over its first 500 meters of driving on the martian surface in measurements taken with ChemCam, CheMin and SAM. These measurements indicated 1.5% to 3% of the weight of soil samples was water. Previously, orbiters had indicated that similar water content was present at various locations around the entire planet. The Curiosity measurements confirmed the orbiter measurements – providing ground truth for the data.



Rover traverse soil targets for the Curiosity's first 100 sols.
Figure from Meslin et al. (2013)



Before and after shots of a soil target on Mars. The marks created by the ChemCam laser are visible in the right image.

Another question regarding water on Mars was whether the water measured by orbiters was actually buried beneath soil as subsurface ice. Curiosity data showed that the water is not subsurface ice, but instead, trapped in soil particles. Curiosity took measurements in day and night and showed that there was no water exchange between soil and atmosphere (e.g. no 'morning dew' like on Earth), meaning that water has been trapped in the soil for a long time and is not easily transferred.