Characterization of the regions displaying featureless spectra on the Moon, using visible to near-infrared and thermal infrared remote sensing datasets: implications for the lunar crust

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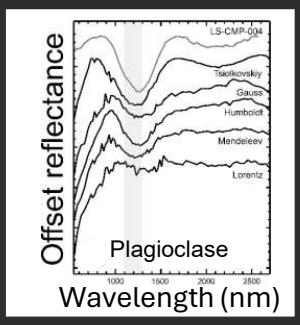
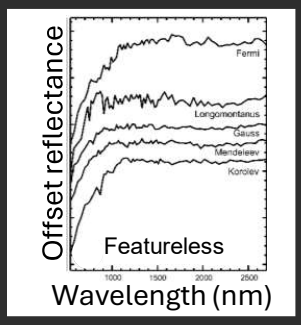
What?



Modified after Martinot *et al.* (2020)

Relationship?



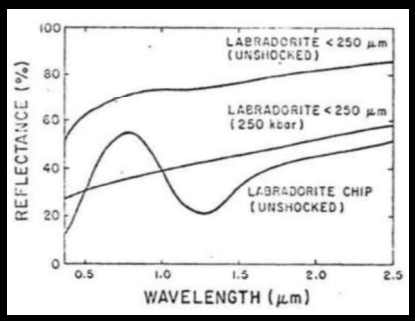
Modified after Martinot *et al.* (2020)

Shock pressures

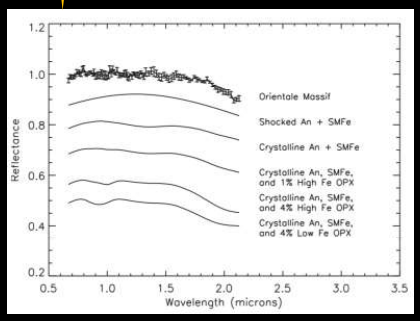
Space weathering

Spatial mixtures

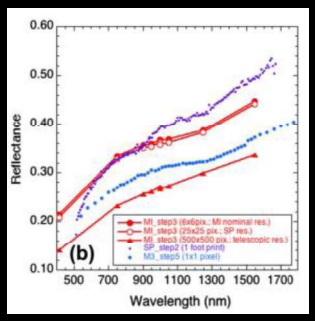
Composition (Fe content)



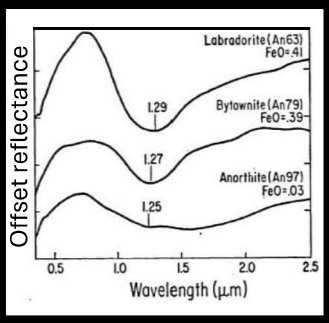
Adams, Hörz & Gibbons (1979)



Lucey (2002)



Ohtake *et al.* (2013)

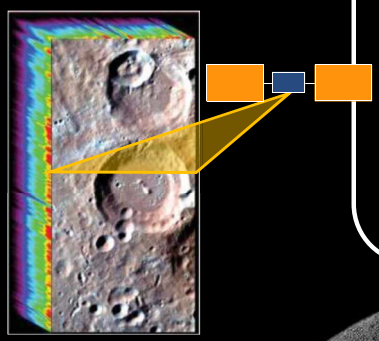


Modified after Adams & Goullaud (1978)

How?

1. M³

The Moon Mineralogy Mapper (M^3) is a VNIR hyperspectral imager that measured reflectance at the lunar surface between 0.45 and 3 μm (Pieters et al., 2009). M^3 is used to map areas that are featureless (FL), as well as areas that have a plagioclase signature.

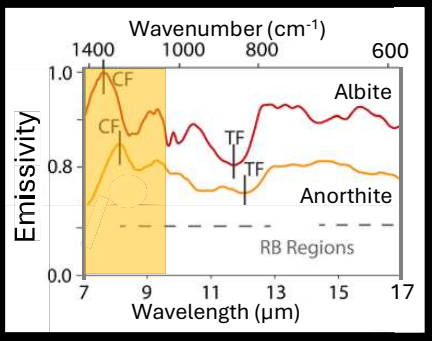


Green *et al.*, 2011

2. Diviner

FL areas are then investigated using Diviner data (0.3 to 400 μm), which channels in the 8 μm region provides key information about the composition of the lunar surface (Paige *et al.*, 2010).

3. Lab



Modified after Donaldson Hanna *et al.* (2014)

Lab measurements of lunar meteorites and synthetic plagioclase will be done to investigate if composition or shock pressures cause FL spectra.

References: [1] Martinot *et al.* (2020), Icarus. [2] Adams, Hörz and Gibbons (1979), LPS X. [3] Lucey (2002), GRL. [4] Ohtake *et al.* (2013), Icarus. [5] Adams and Goullaud (1978) LPS IX. [6] Pieters *et al.* (2009), Curr. Sci. [7] Paige *et al.*, (2010), Science.