

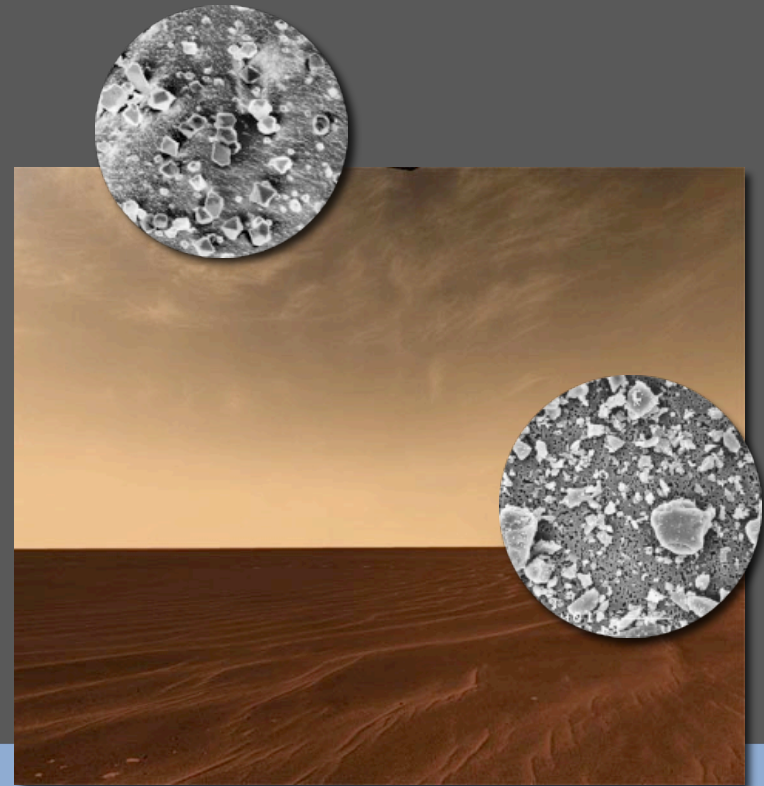
Detecting and characterizing Martian dust using spectropolarimeter SPEX

+ ice

D.M. Stam, J.M. Smit, F. Snik, C.U. Keller, ...

What does this have to do with methane?

- Dust particles can play a role in the destruction of methane
- Ice particles might play a role in the release of methane
- Dust and ice particles will influence the retrieval of methane

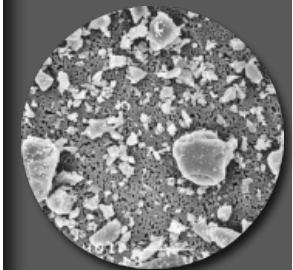
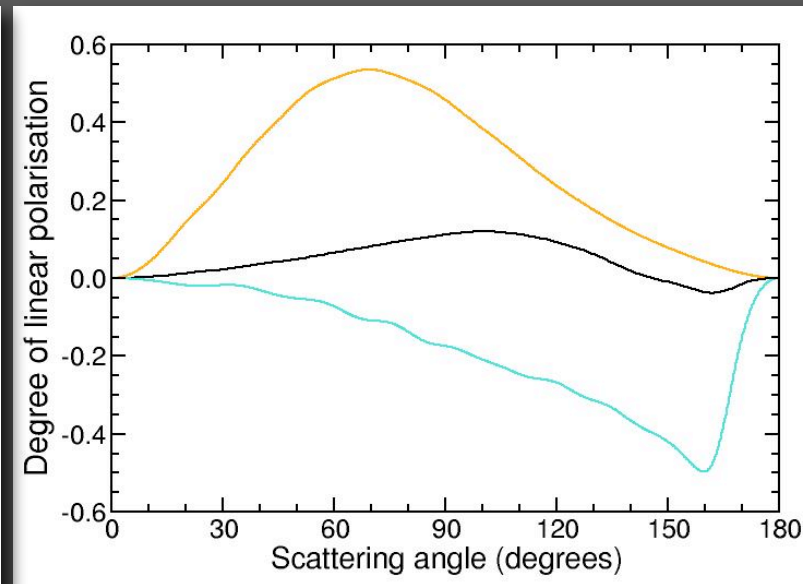
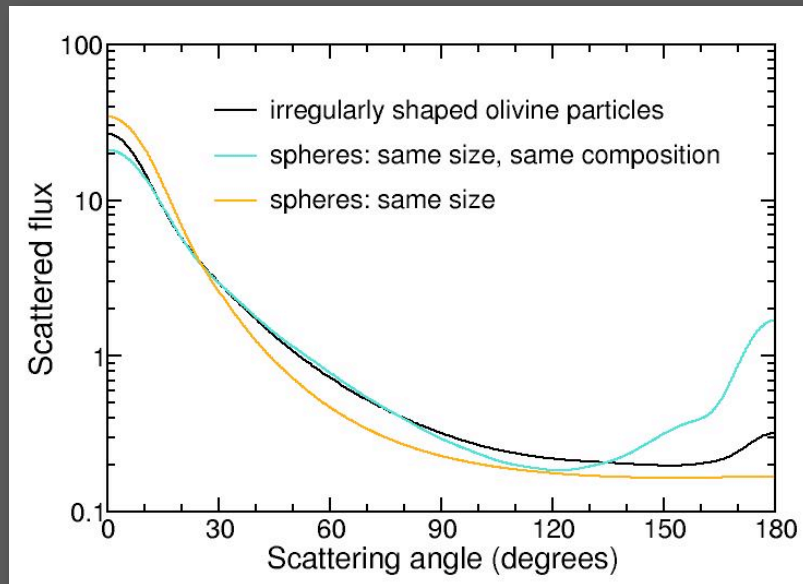


SRON

Netherlands Institute for Space Research

Why spectropolarimetry?

The polarization of sunlight that is scattered by particles in a planetary atmosphere and on the surface is *very* sensitive to their microphysical properties (size, shape, and composition)



Moreno et al. [2006]

Why SPEX?

- It measures total fluxes and polarization simultaneously
- It measures from ~ 400 nm to ~ 800 nm
- Spectral resolution: 2 nm (flux) to 20 nm (polarization)
- Novel, patented polarimetric method without moving parts
- It is robust and small (\sim few kg)
- A demonstration model is being constructed

