Detecting and characterizing Martian dust using spectropolarimeter SPEX

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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

+ ice
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 (~ few kg)
- A demonstration model is being constructed