Questions, Comments and Answers following the presentation

Calibration and analysis of the telluric O_2 bands

Michael Sterzik

Martayan: How would the lunar craters, mountains, valleys affect the polarization measurement? Is it what you called moon depolarization

The lunar surface is composed of fine-grained regolith, and its reflection and scattering properties are complicated, and actually unknown for a strictly back-scattering geometry applicable to Earthshine. Indeed, lunar depolarization depends on albedo, thus is the backscatter region is in highlands or mare. These effects have been discussed eg in Bazzon et al. (2013), A&A 556, A117.

Kerber: Will the polarimetric variability of the O2 A band be a diagnostic tool for clouds on extrasolar planets?

The large dynamic range of the O2 band in high spectral(-polarimetric) resolution has great diagnostic value. It is well possible that these lines could be useful in exo-planets given their Dopplershift relative to telluric lines.

Kaufer: Is there a perspective that specpol measurements of the sky (e.g. at sunset) can provide an extinction model for the night?

Observationally and technically this seems possible. But we will have to verify first how accurate the retrieval of aerosols and high clouds from the sunset measurements really is, and how well this correlates with the nightly extinction.

Schmidtobreick: Are they any direct polarimetric measurements of Earth from the outside? Like some space mission turning around and looking back?

Only a few Earth observation satellites host(ed) polarimetric instruments. In particular the French-Japanese POLDER and PARASOL missions (2003-2013) have generated time and spatially resolved maps of Stokes vectors, from which higher level data products (in particular aerosol and cloud microphysical properties, and the radiation budget) are made available.