

# Planetary Science Conference

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## *Mineralogy of the Meridiani Planum site based on the MiniTES spectra of the Opportunity rover*

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[POSTER]

The Opportunity rover explored the Meridiani Planum area in the years 2004 – 2018. The rover traverse encompassed several craters, where there was liquid water in the past. In some places, the Mossbauer spectrometer indicated large amounts of iron oxides (hematite, goethite) and sulfates (probably jarosite). We wanted to check the consistency of the MiniTES and the Mossbauer results. Our mineralogical interpretation of the spectra should allow for a better understanding of the geological history of this area. Thanks to the Mossbauer spectrometer, the sulfur minerals olivine and hematite were detected primarily. Additionally, we identified pyrite, carbonates and clay minerals. We also observed changes in mineralogy when the rover crossed the crater boundaries. The occurrence of hematite is evidence of the existence of water in this area in the past. Our research combines also the study of analogues of terrestrial concretions. The rich mineralization of these Martian equivalents confirms the possible occurrence of such minerals on Mars. We want to indicate a potential source of minerals found on Meridiani Planum and collected in concretion-type formations.