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UV-VIS-NIR reflectance spectroscopy of vesta analogs: the case of Millbillillie.

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We discuss the some experimental results obtained with UV-VIS-NIR reflectance spectroscopy techniques applied to a slice extracted from the Millbillillie meteorite. Millbillillie is an eucrite supposed to come from Vesta. The study of this sample is important not only to improve our knowledge on the eucrites but even to develop tools for the analysis of the data that will be acquired during the dawn mission which targets are the minor planets 1 Ceres and 4 Vesta.

Measurements have been performed at the LUXOR laboratory in Padova using a Varian Cary 5000 UV/VIS/NIR Spectrophotometer. The spectra have been acquired in the 190-2500 nm range with a spectral sampling of 1 nm. Both specular at 30˚ and diffuse reflectance, by the use of an integrating sphere, have been measured. The sample was at ambient temperature and the ambient atmosphere was dry air.

We have applied the MGM to the spectra of several areas on the sample in order to calculate band parameters of the end-members. Such parameters were used to analyse the composition of the sample using relations widely discussed in the literature. Inp particular we have investigated the distribution of the iron along the sample.