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**Spectral reflectance proprieties of HED meteorites: phase angle and composition effects**

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Identification and mapping of compositional units on (4) Vesta using Dawn mission spectral data require an understanding of the surface spectral reflectance proprieties. Here we use a suite of 12 HED meteorites as analog of the Vesta surface. The suite includes: diogenite, olivine-rich diogenite, dunitic diogenite, howardites, noncumulate and cumulate eucrites, shocked eucrite. Chemical analyses were carried out with a SEM Jeol840 and 0.32-2.5µm spectra were acquired at 24 different phase angles and for 4 grain size ranges with a ASD FieldSpec Pro HR. Several technique for spectral compositional analyses were tested.

Pyroxenes absorption band depths are affected only by phase angle and in a systematic way. Spectral slope is affected by both phase angle and grain size range, in a non-systematic way. Band center are mainly unaffected by phase angle or grain size. Uncertainty due to observation geometry and grain size is of 9.2 % of Fs content (worst case). Mean uncertainty due to pyroxene Fe and Ca content is of 9.3 % Fs.

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