



The Visible-IR Mapping Spectrometer of Dawn

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The recent decision of IAU states that the Solar System consists of eight "planets" and a new distinct class of objects called "dwarf planets". The first members of the "dwarf planet" category are Ceres, Pluto and 2003 UB313. This means that the Dawn Mission, to Vesta and Ceres will be the first mission visiting one of these dwarf planets. Moreover Dawn will visit Vesta, that is also a very special body, being one of the few asteroids of the main belt with clear evidence for a differentiation. Therefore Vesta is an important example of intermediate objects that possibly underwent to an early differentiation, due to the decay of short lived radioactive elements. Only in situ observation will be able to disentangle the real nature of Vesta and Ceres. Dawn mission is perfectly suited to do that, thanks to its payload, that will permit to study the geology (thanks to FC, the cameras), the geochemistry (thanks to the Grand, gamma spectrometer) and mineralogy (thanks to VIR- MS, the imaging spectrometer). Here we will describe the VIR-MS characteristics. VIR-MS is an imaging spectrometer coupling high spectra and spatial resolution in the Visible (0.25-1 micrometer) and IR (0.95-5 micrometers) ranges. We have developed a spectrometer able to cover both Visible and IR regions of the spectrum combining these two spectral ranges in one instrument because diagnostic minerals have absorption bands in the Visible and NIR regions. We will describe VIR and its expected performances in terms of understanding both Vesta and Ceres.