

VESTA IN THE ULTRAVIOLET/BLUE: WHAT WE KNEW BEFORE DAWN'S ARRIVAL, AND HOW DOES IT AUGMENT WHAT WE LEARNED FROM DAWN? F. Vilas¹, A. R. Hendrix¹, J-Y Li¹ and A. L. Cochran², Planetary Science Institute, 1700 E. Fort Lowell Rd., Suite 106, Tucson, AZ, 85719, fvilas@psi.edu, McDonald Observatory, University of Texas, Austin, TX 78712.

Earth-based telescopic measurements established that the unique asteroid 4 Vesta was an obvious target for space-based exploration following the discoveries tracing Vesta's spectral reflectance through a string of likely daughter asteroids to the Earth, and tying the asteroid reflectance to the howardite-eucrite-diogenite (HED) meteorite compositions. We review what was known in the ultraviolet/blue spectral regions before Dawn arrived at Vesta, both demonstrating the predictions that Earth-based observations can make about a target asteroid at these wavelengths, and placing the Dawn data in the context of the additional UV/blue Vesta data not covered by Dawn instrumentation. Two areas to be addressed are included here; the broader utility of this spectral region will be discussed.

Surface Mineralogy: From broad-band photometry to high-resolution spectroscopy, variations in Earth-based UV/blue surface reflectance exist across Vesta's surface. Do these variations map to the now-observed higher spatial resolution surface maps of Vesta? Does the detailed Dawn reflectance data of Vesta confirm the results of UV/blue Earth-based reflectance data?

Surface Space Weathering: Current hypotheses predict that the UV/blue wavelength range could constitute a spectral region that provides more advanced indication of the onset and progression of space weathering in S-complex (mafic silicate) asteroids. Were there predictable signs of weathering for the Vesta surface material in the UV/blue data?