

Engineering Specification for large-aperture UVO space telescopes derived from Science requirements

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ABSTRACT

An advanced large aperture UV/optical UVO space telescope is required for the next generation of astrophysics and exoplanet science. The science requirements of proposed exoplanet and astrophysics missions were used to determine the encircled energy, point spread function stability and thermal environment requirements. These requirements then determine the optical wavefront specification for potential telescope assemblies which can fit inside current and planned launch vehicles. The optical wavefront specification becomes the top level of the error budget that is split into various sources that control the structural, thermal and optical design.