



# Space Environments Effects Test Capability



## Objective:

The subject materials and/or systems to a sequential or combined space environment, characterize the response and determine life predictions. The combined environment includes MeV level electrons and protons, KeV electrons, Vacuum Ultraviolet (VUV), solar spectrum and vacuum. In-situ, spectral reflectance measurement of exposed sample is standard.

## Why Needed

Materials and systems must perform specific functions while operating in the environment of space. It is well documented that exposure to the space environment degrades material properties and thus limits functional life. All programs that develop spacecraft must address the effect of the space environment on their hardware. Ground-based space environmental effects systems provide the required information pertaining to the effects of the space environmental effects on materials and/or systems. Ground-based testing offers the inexpensive flexibility to select the spacecraft environment and perform multiple sample exposure to gain statistical confidence.

## Point of Contact

David Edwards / ED31  
Phone: 256-544-4081  
Email: david.edwards@msfc.nasa.gov

## Sponsor

International Space Station (ISS), Hubble Space Telescope (HST), Chandra X-Ray Telescope, Next Generation Space Telescope (NGST), and Solar X-Ray Imager (SXI)