

Radiation Measurements in Mars Orbit with the Odyssey Instrument Suite

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The MARIE instrument aboard the 2001 Mars Odyssey spacecraft made detailed measurements of energetic charged particles from March 2002 to October 2003, when it failed in a huge solar event. Subsequent efforts to revive the instrument have not succeeded, but it has been possible to continue monitoring the Martian radiation environment using two other instruments flying on Odyssey: the Gamma-Ray Spectrometer (GRS) and the High-Energy Neutron Detector (HEND). The MARIE data have been used to cross-calibrate data from the other two instruments. Measurements of total flux, and model-dependent estimates of dose and dose equivalent, spanning the entire duration of Odyssey's time in orbit at Mars, will be presented.