

The Challenge of Orbital Debris

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Since the dawn of the Space Age more than 50 years ago, humans have been launching objects into the space environment faster than they have been removed by active means or natural decay. This has led to a proliferation of debris – derelict satellites, discarded rocket upper stages, and pieces from satellite breakups – in Earth orbit, especially in well-used orbital regimes. This talk will summarize the current knowledge of the debris environment and describe plans to address the challenges orbital debris raises for the future usability of near-Earth space. The talk will be structured around 4 categories: Measurements, Modeling, Shielding, and Mitigation. This will include discussions of the long-term prognosis of debris growth (i.e., the “Kessler Syndrome”) as well as plans for active debris removal.