

Two astronauts, NASA's Andrew Morgan and ESA's Luca Parmitano, are gearing up for a series of complex spacewalks to repair the Alpha Magnetic Spectrometer (AMS) outside the International Space Station. Launched in 2011, the AMS studies cosmic particles using a superconducting magnet but faced operational challenges when multiple cooling pumps failed prematurely. The upcoming spacewalks, beginning on November 15, aim to replace these critical components and upgrade others, ensuring the AMS continues to function effectively. This repair effort, involving at least four spacewalks, is crucial as NASA plans for potential space station operations beyond 2024. The mission underscores both the technical prowess of astronauts and the intricate planning required by ground teams to execute repairs in the unforgiving environment of space.