

Autonomous Planning and Scheduling on the TechSat-21 Mission

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Abstract

The Autonomous Sciencecraft Constellation flight demonstration (ASC) will fly onboard the Air Force's TechSat-21 constellation (an unclassified mission scheduled for launch in 2006). ASC will use onboard science analysis, artificial intelligence-based replanning, robust execution, model-based estimation and control, and formation flying to radically increase science return by enabling intelligent downlink selection and autonomous retargeting. Demonstration of these capabilities in a flight environment will open up tremendous new opportunities in planetary science, space physics, and earth science that would be unreachable without this technology.

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