

NTU Singapore Testing 3D Printed Materials on New Satellites

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Nanyang Technological University, Singapore (NTU Singapore), has achieved a significant milestone in its space program by successfully launching three new satellites into orbit. Named VELOX-AM, ARCADE, and SCOOB-II, these satellites will undertake crucial orbital experiments in 3D printed materials, atmospheric science, and new space materials.





Researchers with the three new satellites. (Image Credit: NTU Singapore)

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VELOX-AM, a micro-satellite, is exploring the feasibility of 3D printed parts in space, including shape memory polymers that regain their original shape after deformation. ARCADE, an experimental satellite, is equipped with four instruments to study atmospheric coupling, ionospheric plasma density, atomic oxygen degradation, and Earth imaging. SCOOB-II, built by NTU students, features advanced electronics for testing operations in space and an improved attitude control system for maximum solar energy absorption.

These satellite launches demonstrate NTU Singapore's prowess in satellite engineering and undergraduate space engineer training. Additionally, the successful launch of the ORB-12 STRIDER, featuring a cutting-edge propulsion engine from NTU spin-off Aliena, highlights Singapore's growing capabilities in the space industry.

Using satellites for orbital experiments presents several advantages. Researchers can gather authentic data in the actual space environment, validating theoretical models and advancing scientific knowledge. Cost-effectiveness is achieved by conducting multiple experiments on a single satellite. Satellites also offer access to remote and inaccessible regions, making them ideal for studying intricate behaviors and pushing the boundaries of scientific exploration.

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