CubeSat

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Context: NASA Announces Next Round of Candidates for CubeSat Space Missions

- CubeSats are a class of research spacecraft called nanosatellites. CubeSats are built to standard dimensions (Units or “U”) of 10 cm x 10 cm x 10 cm.
- typically weigh less than 1.33 kg
- In the beginning, they were commonly used in low Earth orbit for applications such as remote sensing or communications. As of mid-2018, a pair of CubeSats has been deployed on a mission flying to Mars, and other CubeSats are being considered for the moon and Jupiter.
- CubeSats reduce launch costs in two fundamental ways. They don’t weigh that much, which means a rocket doesn’t need a lot of fuel to heft them. In most cases, they also share a rocket with a larger satellite, making it possible to get to space on the coattails of the heavier payload.
- There are some design challenges with CubeSats, however. The electronics are smaller and are therefore more sensitive to radiation. Because they are small, they cannot carry large payloads with them. Their low cost also means they are generally designed to last only a few weeks, months or years before ceasing operations
- NASA’s CubeSats are deployed from a Poly-Picosatellite Orbital Deployer, or P-POD. NASA’s CubeSat Launch initiative (CSLI) provides opportunities for small satellite payloads to fly on rockets planned for upcoming launches. These CubeSats are flown as auxiliary payloads on previously planned missions.
- To participate in the CSLI program, CubeSat investigations should be consistent with NASA’s Strategic Plan and the Education Strategic Coordination

Framework. The research should address aspects of science, exploration, technology development, education or operations