



LightCube

Mission Overview

LightCube is a 1U CubeSat with an amateur radio controlled flashtube that, when activated, will be visible from the ground with a brightness similar to the International Space Station. Following ISS deployment, LightCube will orbit Earth for less than 2 years before safely deorbiting.

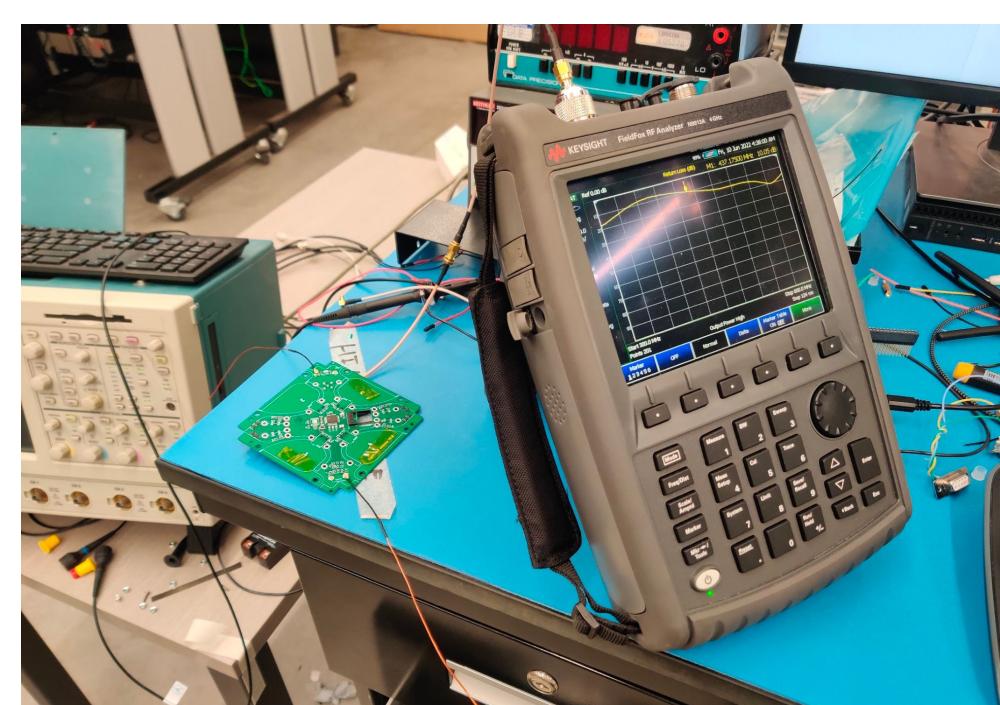
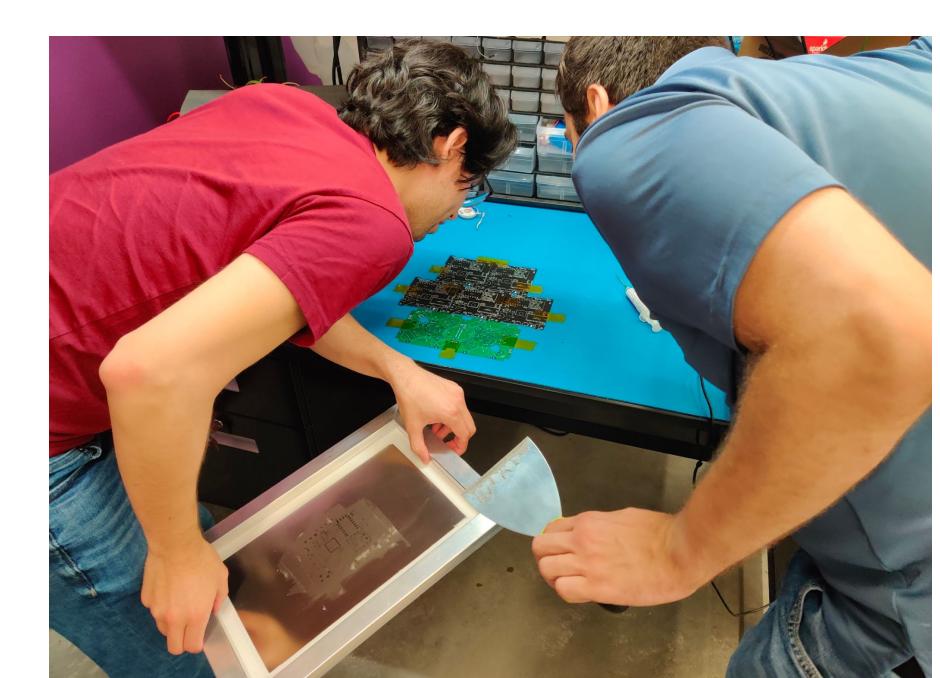
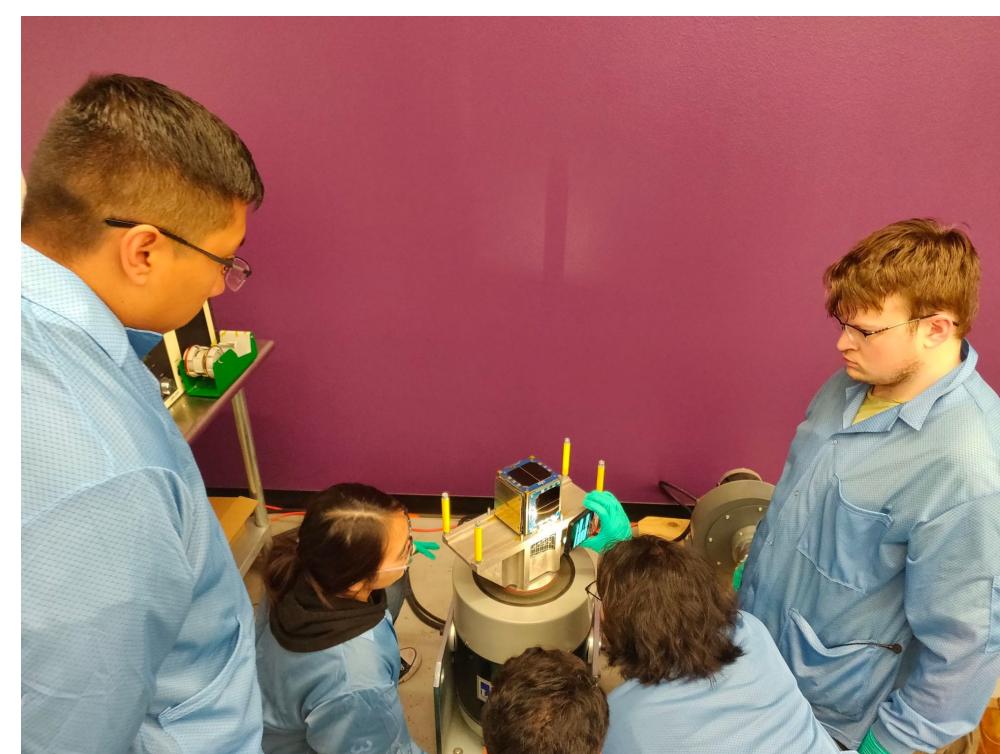
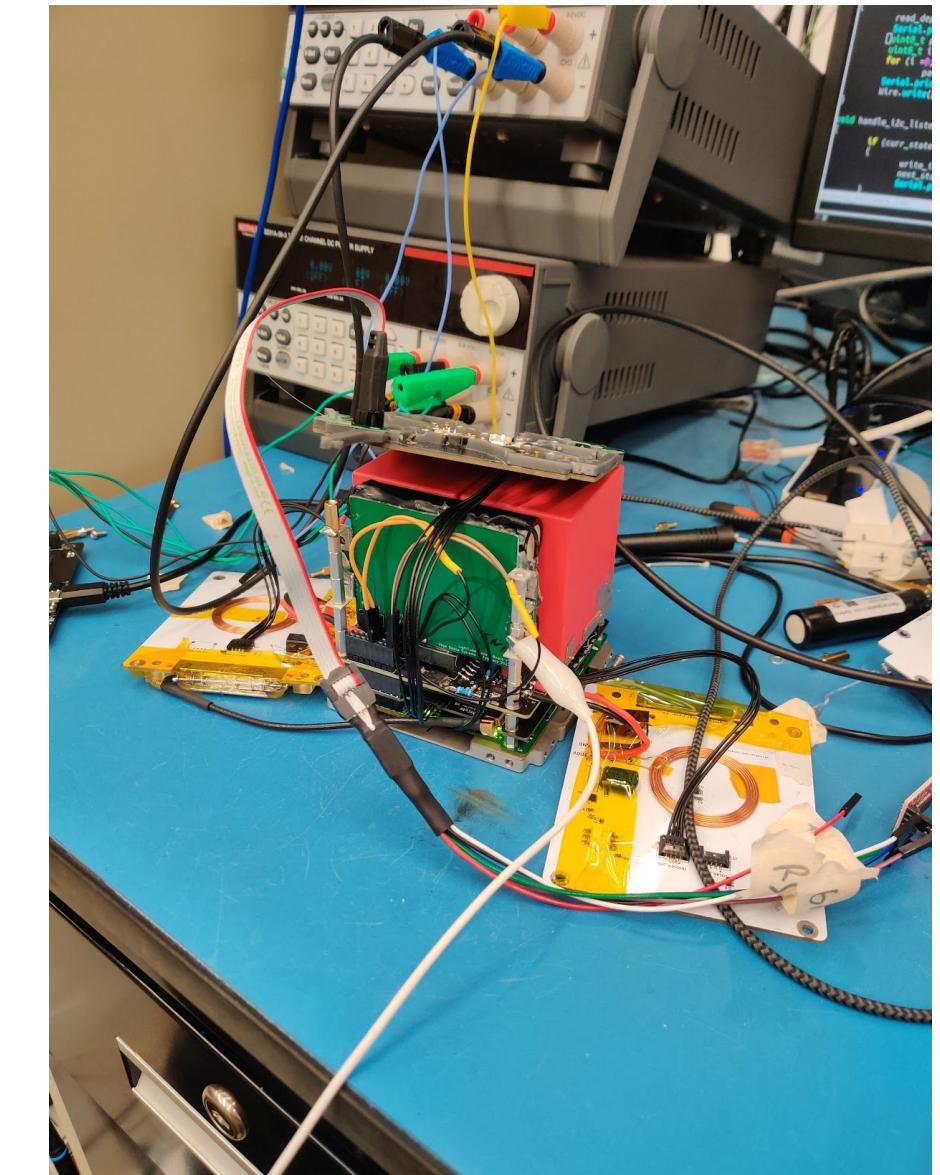
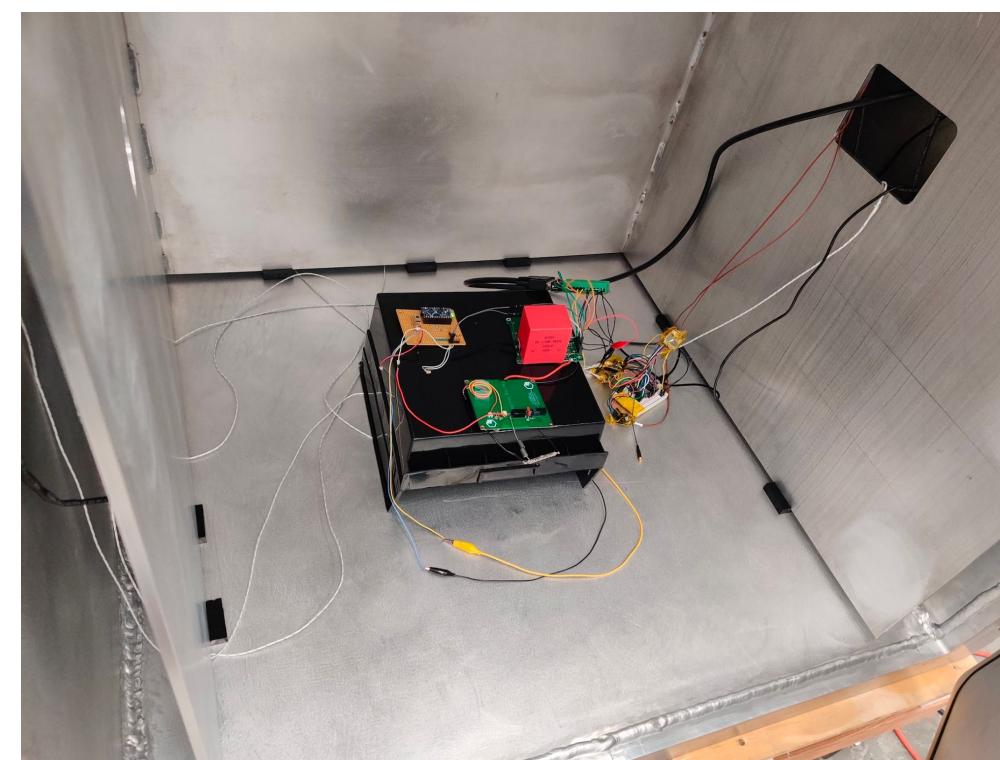
Quick Facts

Dimensions: 10x10x11.35cm
Weight: 0.45 kg
Cost: \$6,900
Payload: 2 Xenon flashtubes
Launch Date: March 2023
Orbit: ISS (51.6°, 400km altitude)



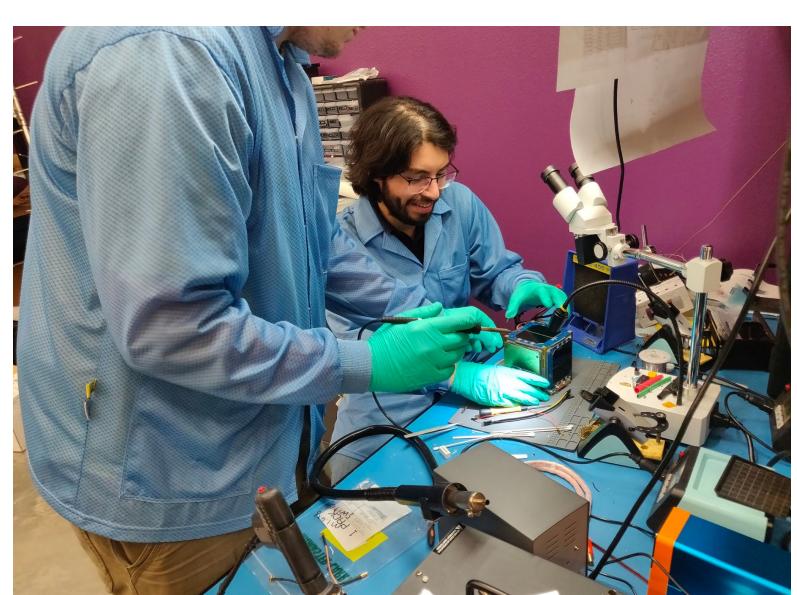
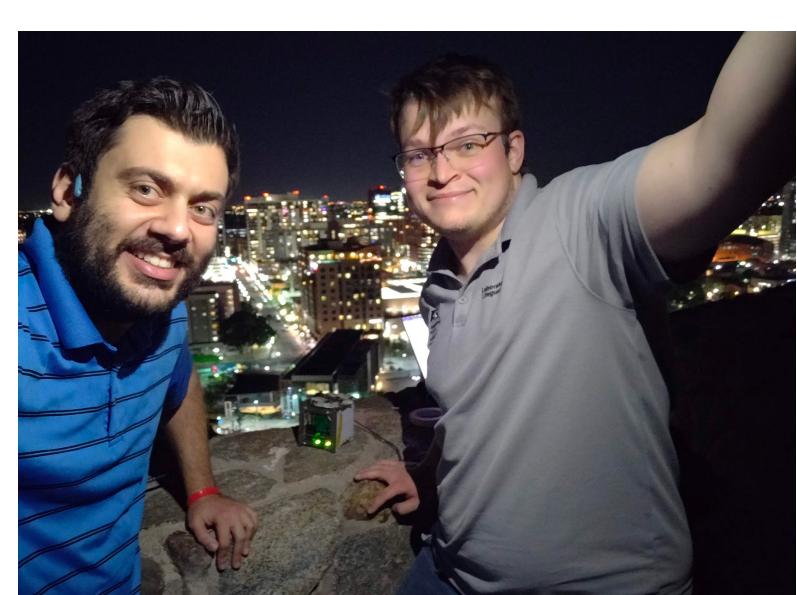
Interplanetary Initiative Lab Involvement

- Developed the gravity gradient, reflector, solar panels, on-campus ground station and software.
- Involved in the design and review of several PCBs.
- Completed several vacuum and vibe tests on various components to increase confidence in components.
- Completed environmental tests on battery pack to launch provider's standards.
- Assembled flight model and EDU model.
- Conducted final vibe test for flight-model LightCube to launch provider's requirements.



Timeline

August, 2019	2020	2021	2022	2023
ASU EE Capstone teams establish the groundwork for LightCube and demonstrate that such a mission is possible. This includes developing the first revisions of several boards and conducting calculations to demonstrate that it is possible to create a flash bright enough to be seen from Earth.	The team applies for CSLI in November 2020 and is accepted in April 2021.	Development, test and integration of a flight-worthy LightCube begins in early 2021 and ends in late 2022. This involved in-house design, assembly, and test of all PCBs and mechanical components of LightCube. Various important environmental tests, such as the final vibe of the final CubeSat, were also conducted in-house.	LightCube is successfully integrated into NRCSD on December 2022 and is due for flight on SpaceX-27 in March 2023.	



Involved Organizations



Interplanetary Initiative Lab

For more information and updates.

