National Aeronautics and Space Administration

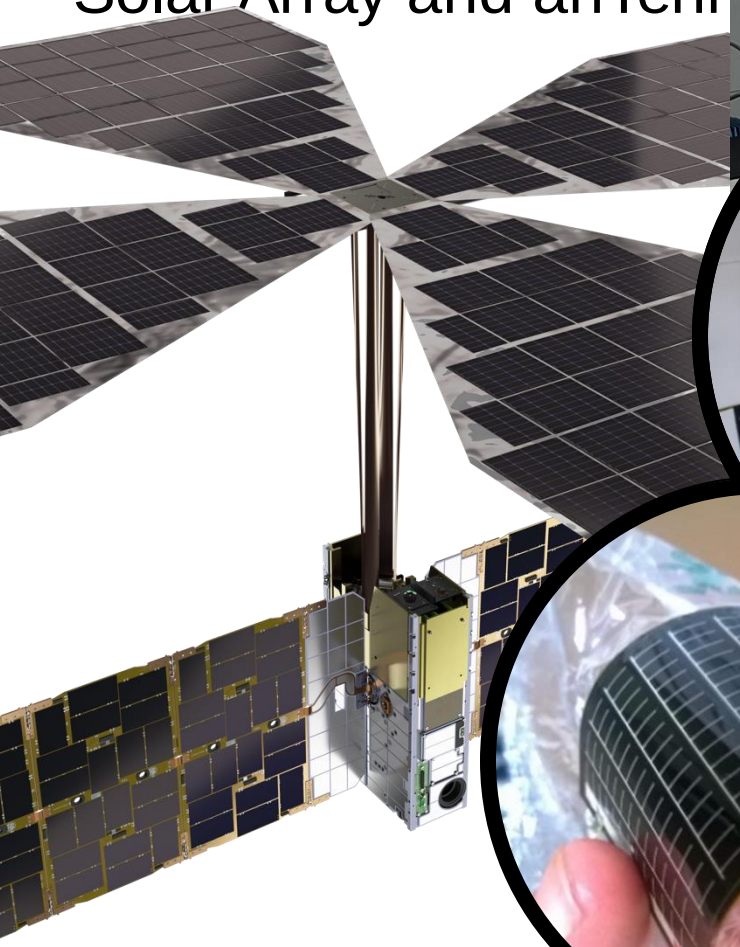
Idea to Flight: LISA-T

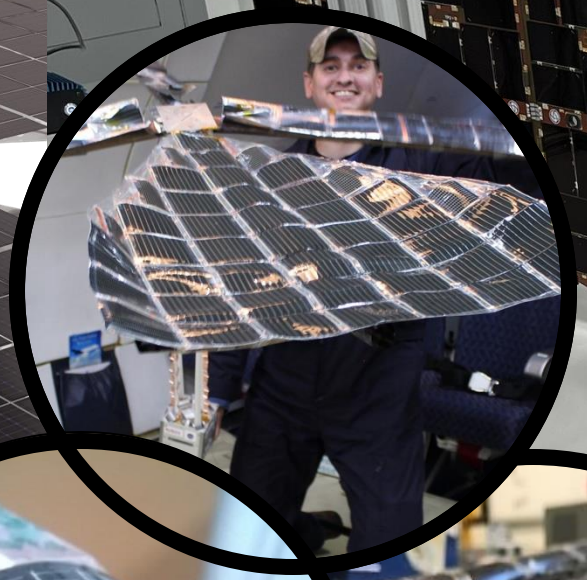
John A. Carr, Ph.D.
NASA MSFC

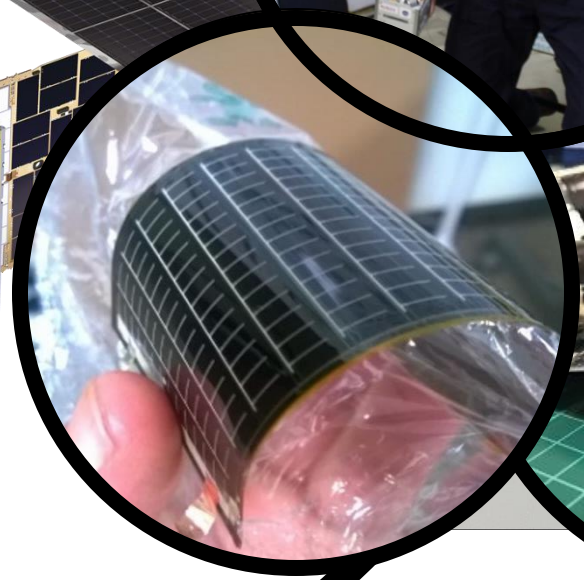
Small Satellite Conference 2024

LISA-T

Lightweight Integrated
Solar Array and anTenn







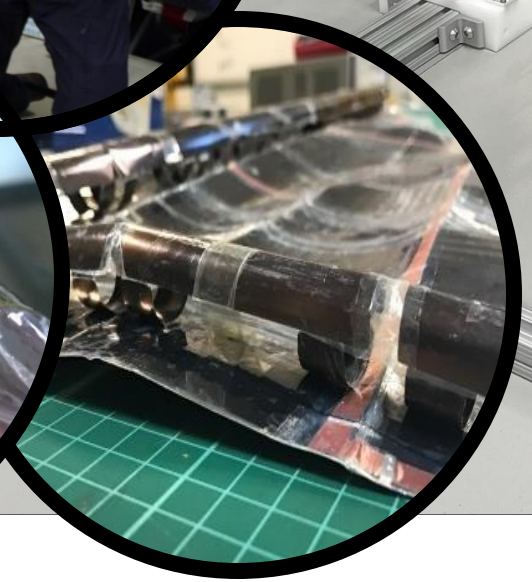
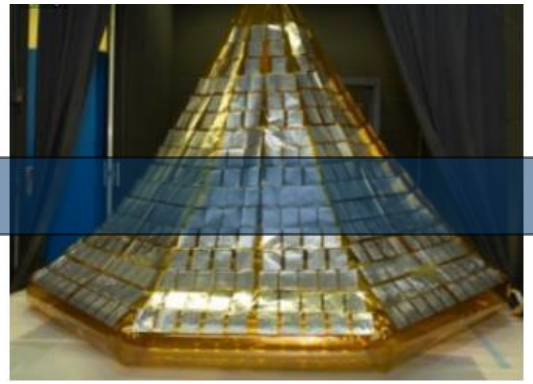
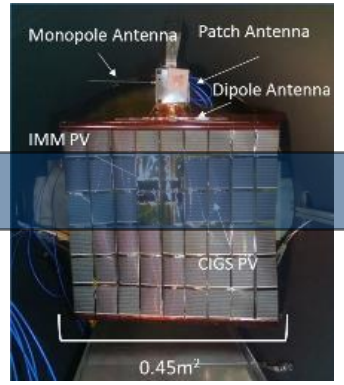


Image Credits: Terran Orbital and NASA MSFC

Conceived by Les Johnson and Leo Fabisinski circa 2011; born from Solar Sails…

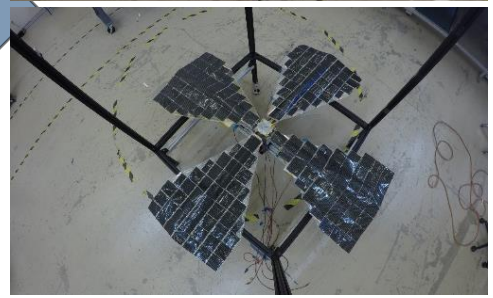
MSFC IRAD 2012 and 2014

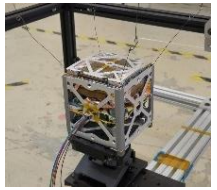


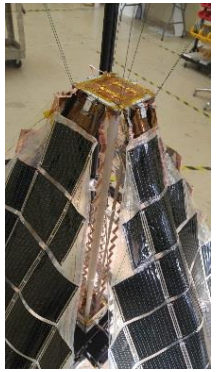


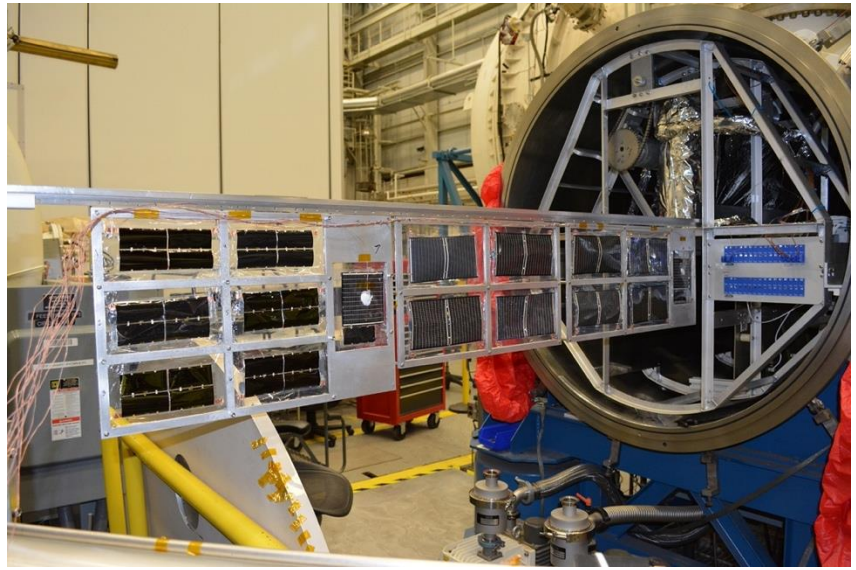
TRL3, Proof of Concept Work

Space Technology Mission Directorate (STMD) Early Career Initiative, 2015-2016







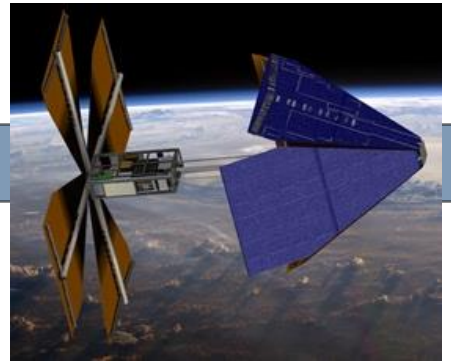


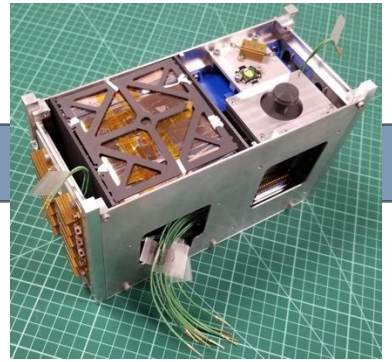
TRL4-6, Benchtop system to Environmental Testing Work

Partners/Providers: MSFC, NeXolve Holding LLC, Ascent Solar, and Microlink Devices

Image Credits: NASA MSFC and NeXolve Holding, LLC

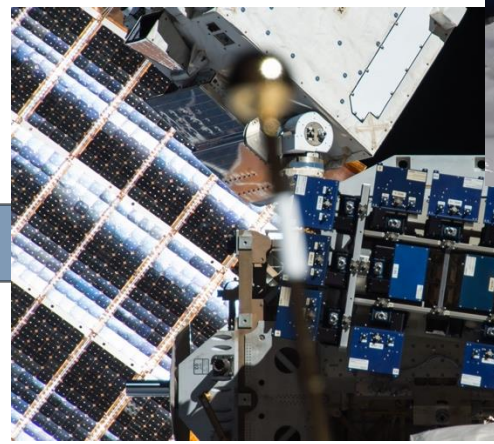
STMD GCD and MSFC IRAD, 2017





‘Seedling’ level work for demo mission concept

STMD MISSE-10, 2019



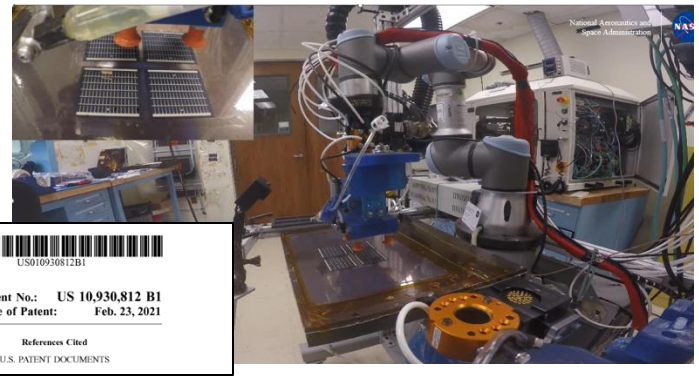
Materials to TRL7 for Low Earth Orbit

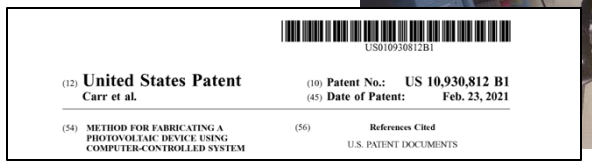
STMD Zero-G, 2019

Simulated microgravity deployment testing

Partners/Providers: MSFC, NeXolve Holding LLC, Ascent Solar, Microlink Devices, and Alta Devices

Spin-off Center IRAD for Robotic Process, 2017





US010930812B1

(12) United States Patent
Carr et al.

(10) Patent No.: US 10,930,812 B1
(45) Date of Patent: Feb. 23, 2021

(54) METHOD FOR FABRICATING A PHOTOVOLTAIC DEVICE USING COMPUTER-CONTROLLED SYSTEM

(56) References Cited
U.S. PATENT DOCUMENTS

Spin-off NOAA OGA for Dedicated Antenna Development, 2020-2024

Image Credits: NASA MSFC

STMD Small Spacecraft Technology Program Demonstration Mission, 2020-2024

System to TRL7 for Low Earth Orbit; Risk reduction mission

Partners/Providers: MSFC, ARC, NeXolve Holding, LLC, Terran Orbital, Ascent Solar, Microlink Devices, and Aerospace Corp

Image Credits: Terran Orbital and NASA ARC

National Aeronautics and Space Administration

NASA

Questions

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