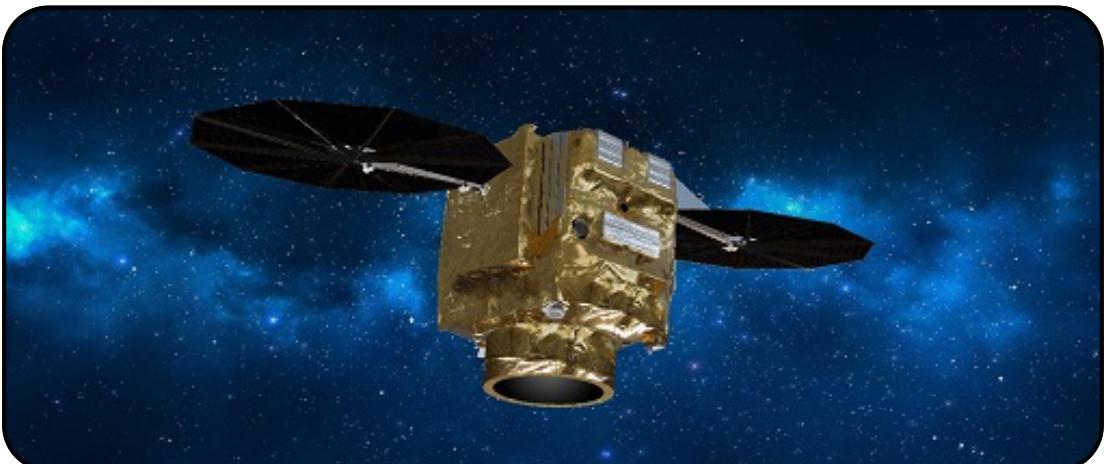
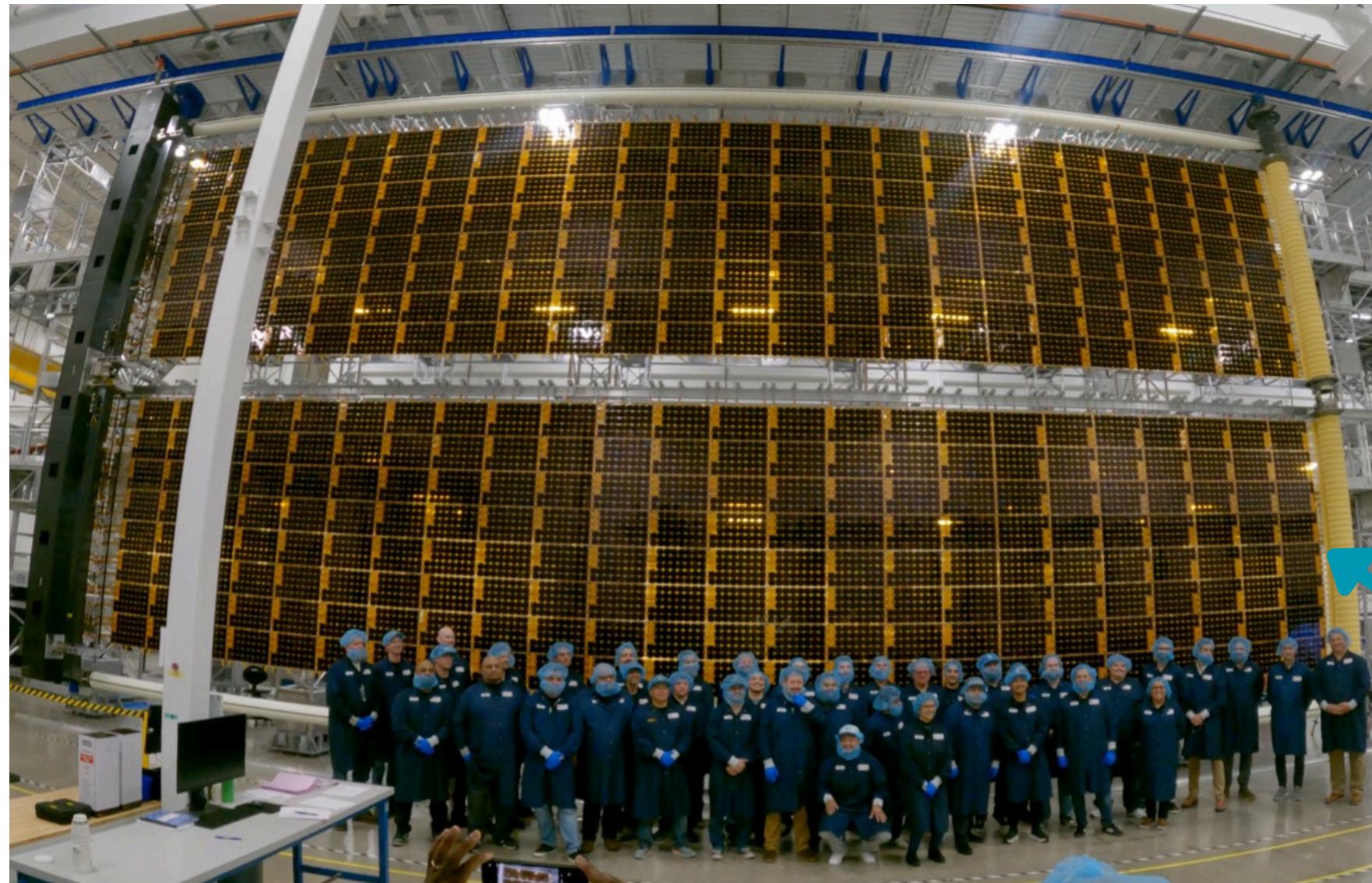


ANU BONTHALAPATI'S PORTFOLIO

MECHANICAL ENGINEER WITH 8+ YEARS EXPERIENCE IN MECHANISMS
AND DEPLOYABLE STRUCTURES

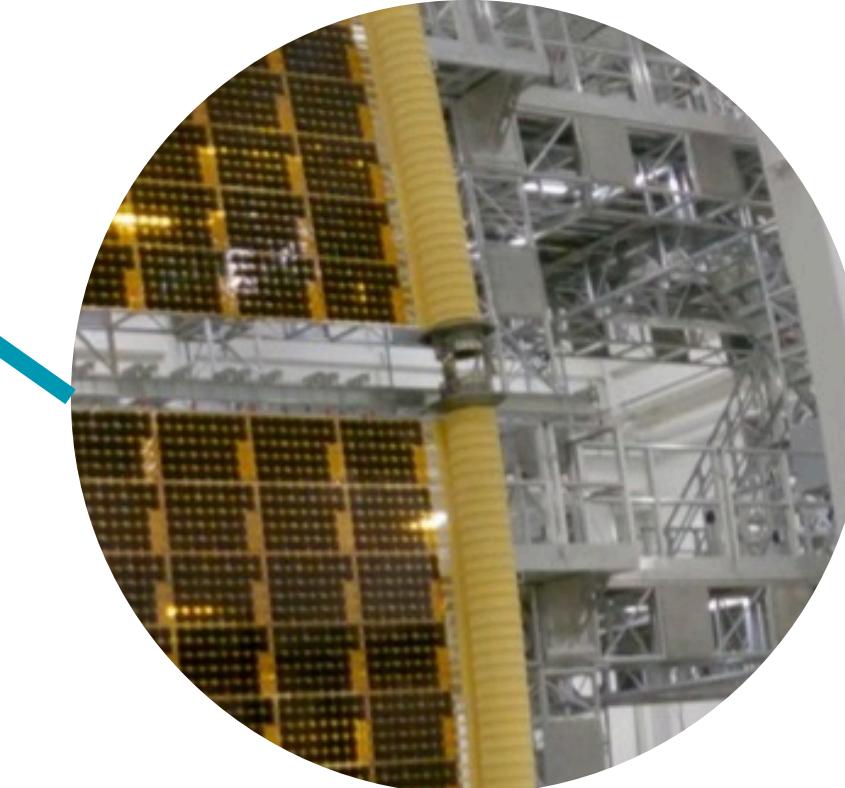


NASA PPE Roll Out Solar Array



Project contributions:

- Structural qualification testing of 10+ units of solar array primary structure
- Testing performed to ensure 1.25x load capability for 15 year mission life around the moon
- Implemented NASA-STD-5019 fracture control testing program for 40+ critical metallic components



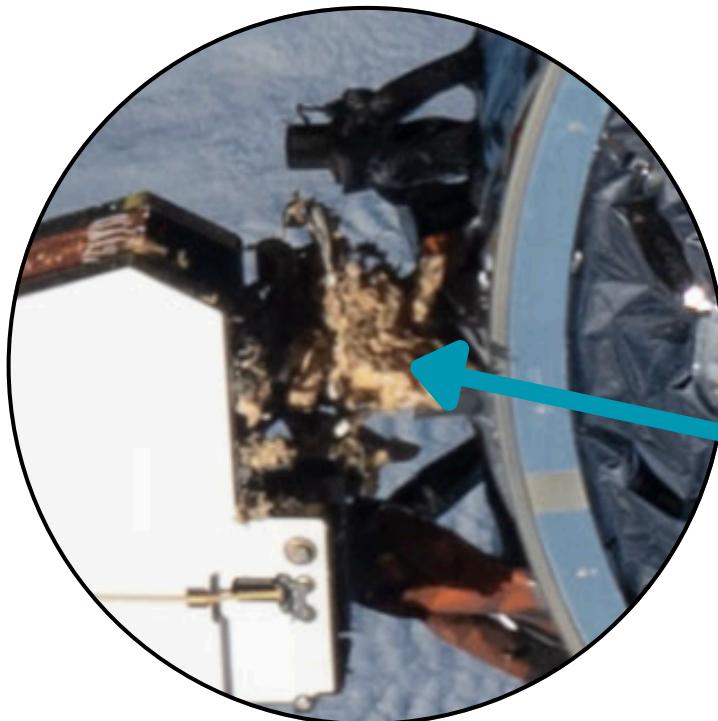
Compliance verification

	NASA TECHNICAL STANDARD	NASA-STD-5019
National Aeronautics and Space Administration Washington, DC 20546-0001	Approved: 01-07-2008 Expiration Date: 01-06-2013 Superseding NASA-STD-(I)-5019 and NASA-STD-5007	

Lead Mechanical Engineer
2023-Present

NASA Cygnus UltraFlex Solar Array

NORTHROP
GRUMMAN



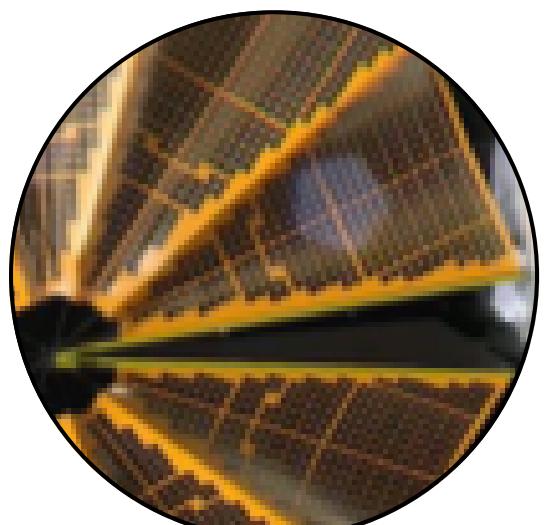
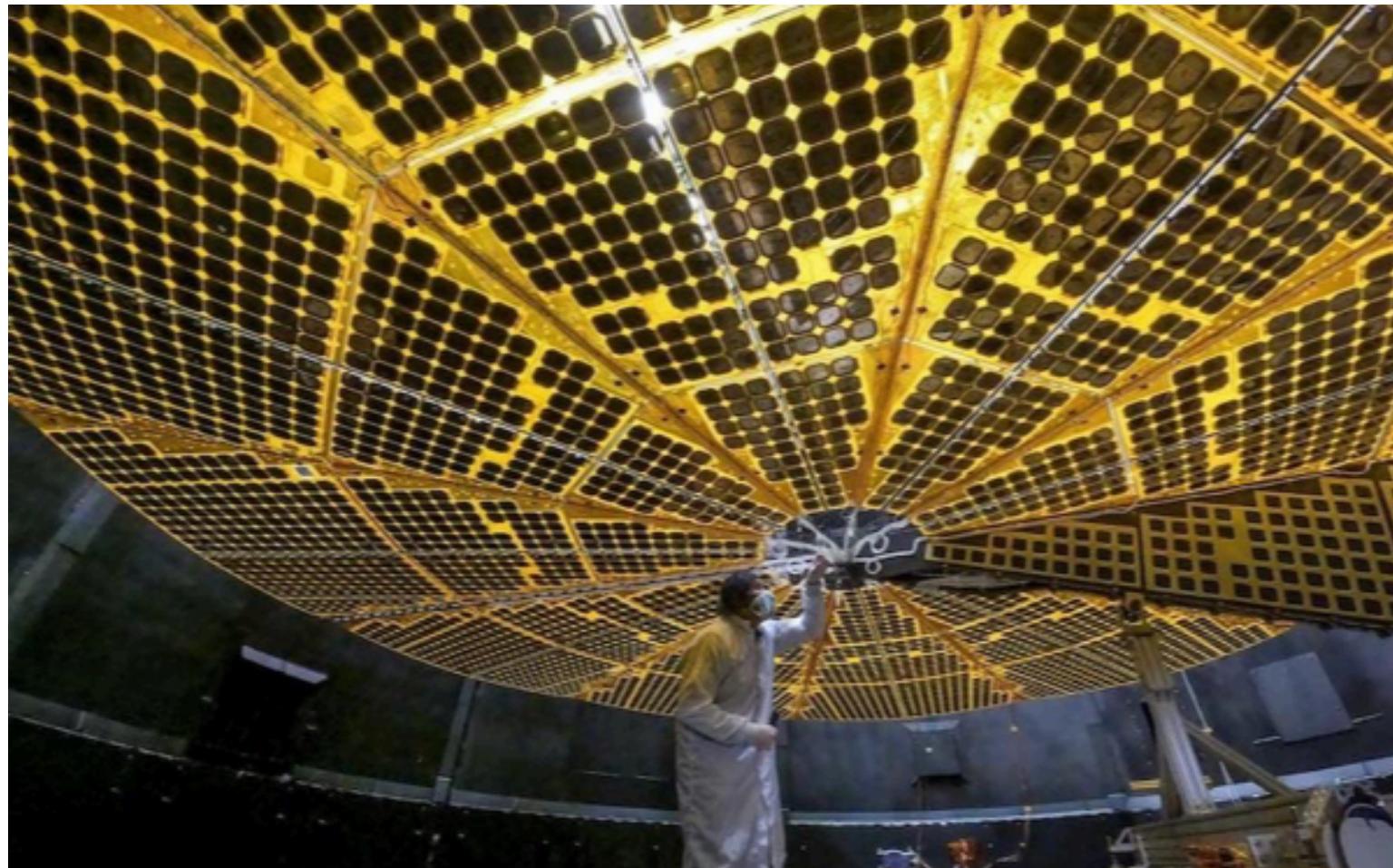
NG-18 Anomaly - FOD
inhibiting deployment

Project contributions:

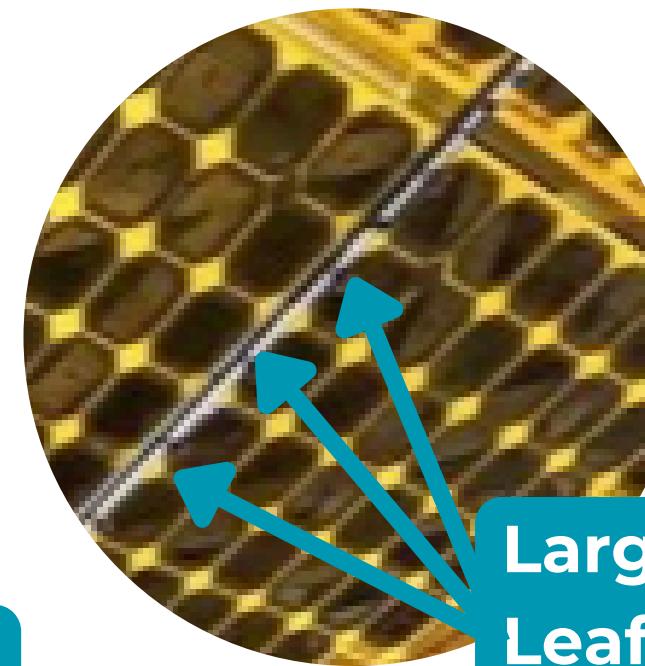
- 9 successful on-orbit deployments of the UltraFlex Solar Array product line for NASA
- Primary non-conformance disposition authority
- Led 48 hr emergency response team to resolve on-orbit deployment anomalies and ensured 100% mission success

Lead Mechanical Engineer
2019-2023

Lucy UltraFlex Solar Array



Deployment Anomaly
Illustration



Large Displacement
Leaf Spring
Mechanism

Project contributions:

- Designed, developed and tested large displacement leaf spring mechanism to tension solar array
 - Large displacement FEA analysis
 - Spring design and testing
 - Interface bond design and testing
- Designed developed and flight qualified solar array deployment motors
 - Deployment kinematic analysis
 - Subsystem and subassembly design
 - Qualification test design and execution
- Deployment anomaly resolution
 - Supported critical anomaly resolution that identified snagged lanyard and enabled recovery strategy achieving 100% mission success

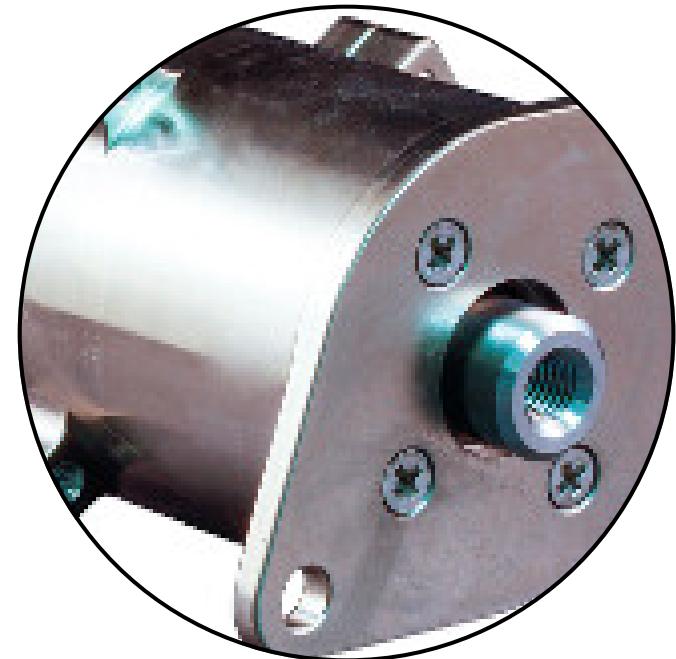
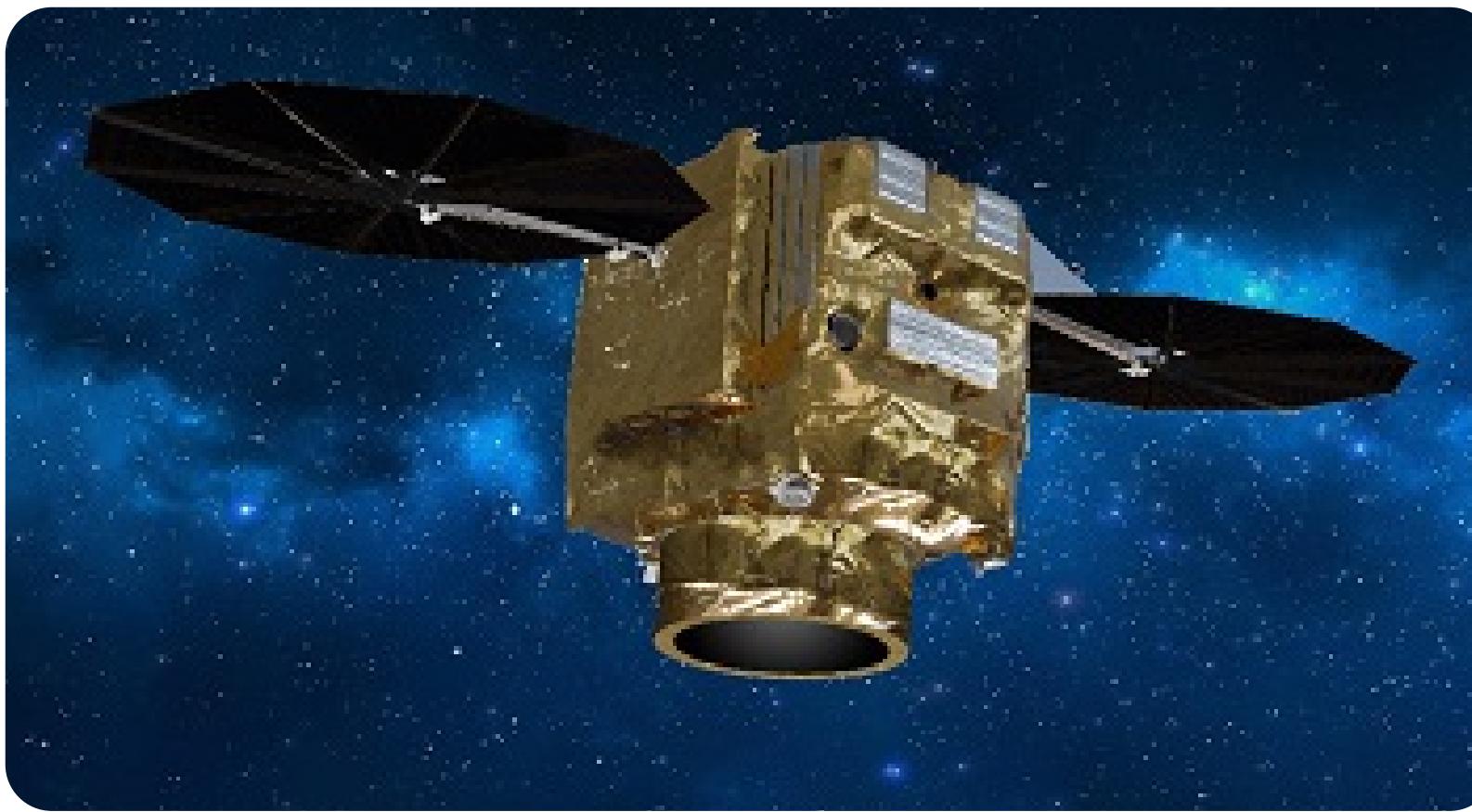


Typical solar array
deployment motor
shown

Mechanical Engineer
2018-2022

Commercial UltraFlex Solar Array

NORTHROP
GRUMMAN



Typical solar array hold down
release mechanism



Typical solar array
deployment motor
shown

Project contributions:

- Solar array tension mechanism
 - Designed, developed and flight qualified a high tension, long-life torsion spring mechanism to enable ultra high stiffness solar arrays for low earth orbit
- Solar array hold down mechanism
 - Designed a high reliability tie-down mechanism to secure primary solar array structure through high G launch loads, achieving 100% deployment success rate across 16 flight units.
- Motor shock qualification campaign
 - Recovered qualification program after shock failure by leading failure investigation using advanced imaging, proving +3dB test over-conservatism through analysis, and negotiated acceptance of flight-representative testing with primary customer

Mechanical Engineer
2017-2023