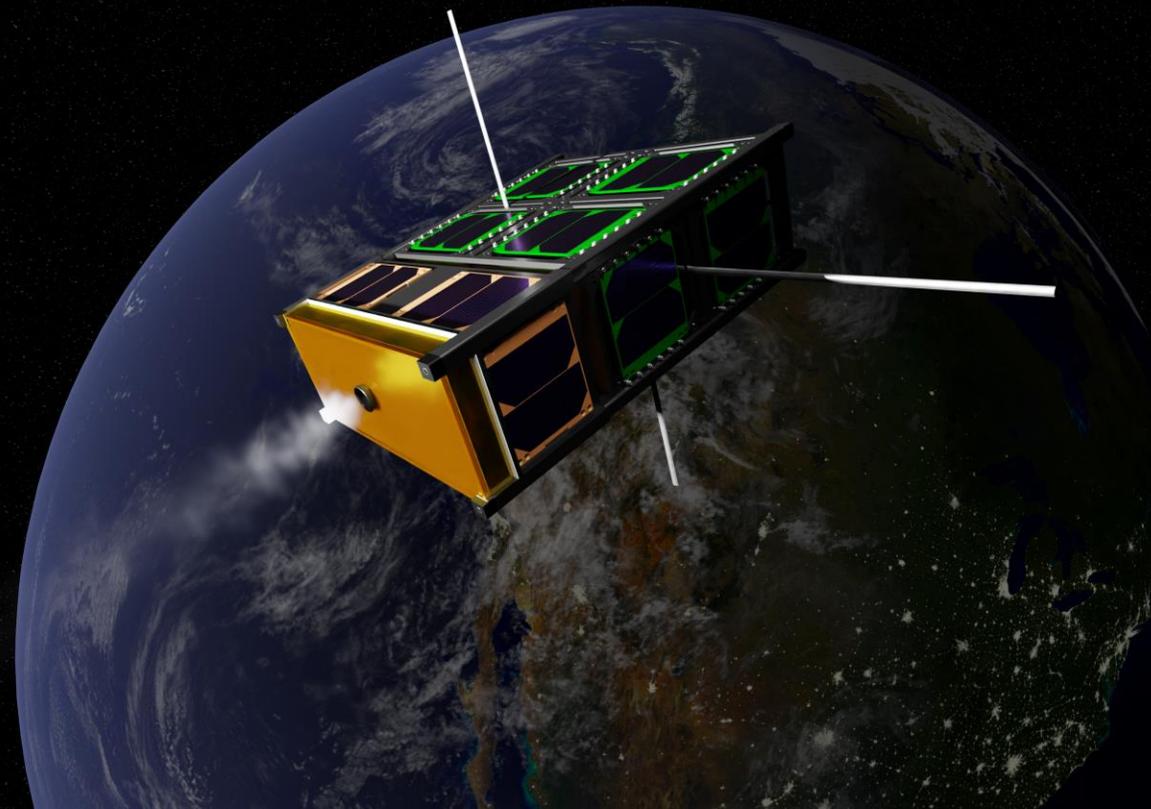


THE THERMASAT

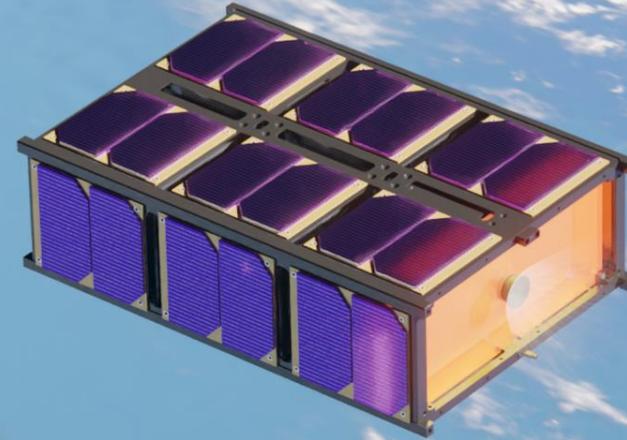
**GATHERING STEAM FOR
THE NEXT INDUSTRIAL
REVOLUTION**

*Dr. Troy Howe
ThermaSat Inc
6/15/2022*



THE **ThermaSat** SUMMARY

- *ThermaSat – A small satellite propulsion system using sunlight and water*
- *Key technologies: molten salts and greenhouse effect*
- *Provides collision avoidance, extends lifetime, de-orbits on completion*
- *Draws minimal electric power, completely safe for launch and ride share, can be used for nearly every satellite*



SMALL SATELLITE REVOLUTION

- ***Current CubeSat Market estimated at \$375M***
- ***Services:***
 - ***Remote Sensing***
 - ***Internet of Things***
 - ***Data Storage***
 - ***Cloud Computing***
 - ***Ship/Plane/Asset Tracking***



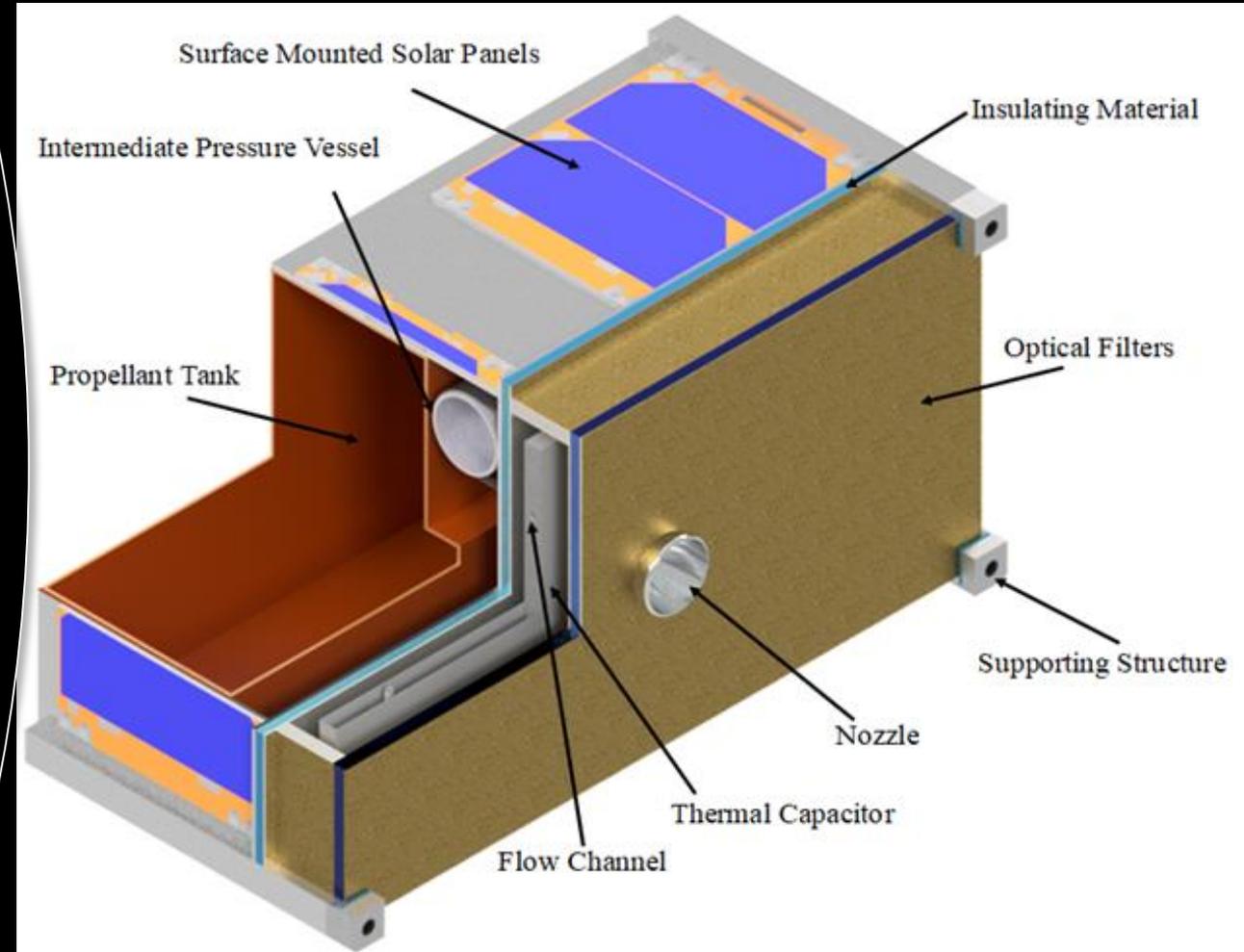
Small Satellites Need Propulsion

- *Satellites require propulsion to maintain orbit, avoid collisions, and de-orbit*
- *Using electric power from the satellite interferes with the mission*
 - *Early 2022: 40 StarLink satellites lost due to geomagnetic storm- could have been saved with ThermaSat*
- *Many small satellites “ride share” on other launch vehicles with other payloads*

SPACE PROPULSION MARKET IN 2026: \$22.5B (MarketsandMarkets)

THE **RMASAT** TECHNOLOGY

- *High energy density thermal storage using Molten salt phase change materials*
- *Novel optical system using selective filters and photonic crystals*
- *Uses superheated steam for high performance propulsion at 1,100K (1,500F)*



THERMASAT BENEFITS

- *Minimal electric power draw*
- *No combustible materials*
- *No corrosive/toxic materials*
- *Can increase lifetime of satellites*
- *Can avoid debris*
- *Can de-orbit at end of life*

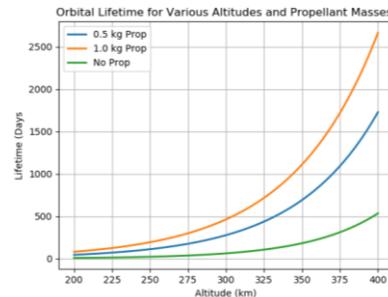




America's
SEED FUND
SBIR.STTR

PROGRESS SO FAR

- *Project has been funded by NSF SBIR Phase I and Phase II grants*
- *Feasibility of optical system, thermal system, and overall design has been shown*
- *Phase II of the SBIR in process, expected to produce operational prototype in Q4 2023*
- *Afwerx subcontracts performed for SCORPIUS and CubeCab*



ThermaSat DEVELOPMENT

- *Independent company ThermaSat Inc formed to focus on ThermaSat technology in 2021*
- *Currently fundraising to acquire staff, equipment, and begin production*



DR. TROY HOWE

CEO

Expert in nuclear power and propulsion systems, 2x NASA NIAC fellow and CEO of Howe Industries



JACK MILLER

CTO

Lead engineer on ThermaSat program and Entrepreneurial lead for NSF I-Corps program.



MARVIN WEINBERGER

Managing Director

Serial entrepreneur and inventor with multiple successful businesses.