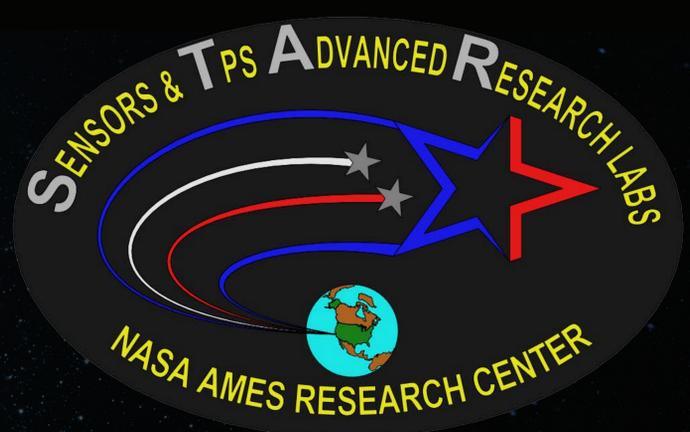


Bohdan O. Wesely
 ❖ Aerodyne Industries
 Joshua N. Hascall
 ❖ San Jose State University
 Joseph G. Mach
 ❖ Sierra Lobo
 Eli R. Hiss
 ❖ Amentum



EARTH and its MOON

Developmental Flight Heat Shield Instrumentation Technologies

NASA Missions

Artemis 1-3



NASA ARC and STAR Labs designed and fabricated a heatshield instrumentation suite for the Orion crew capsule. Data from these in-situ flight instruments will refine aerothermal models and assess vehicle performance.



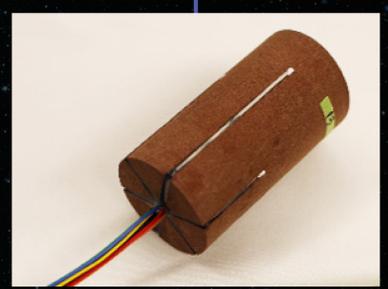
Optical Recession Sensor



Backshell Radiometer



Heatshield Optical Subassembly



Thermocouple Plugs

Commercial Missions

Inversion



NASA ARC and STAR Labs designed and fabricated a complete C-PICA heatshield and SIRCA backshell for the aerospace startup Inversion Space.



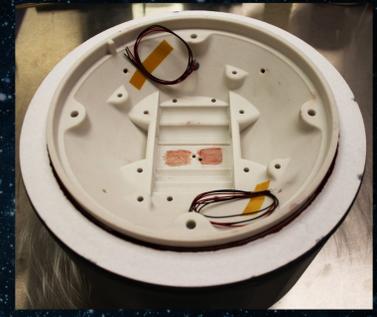
C-PICA Heatshield



Machined Carrier

KRUPS

The Kentucky Re-entry Universal Payload System project consisted of a series of small, low cost entry vehicles produced as part of a collaboration between NASA ARC and the University of Kentucky.



3D Printed Carrier



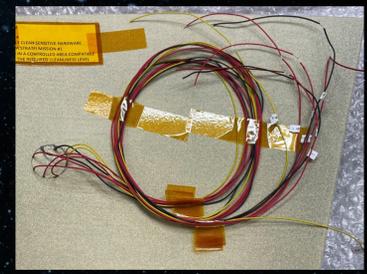
RCG Heatshield

VARDA

NASA ARC entered into a space act agreement with VARDA in 2021 to provide TPS materials, technologies, processes, and hardware for STRATFI missions 1-3.



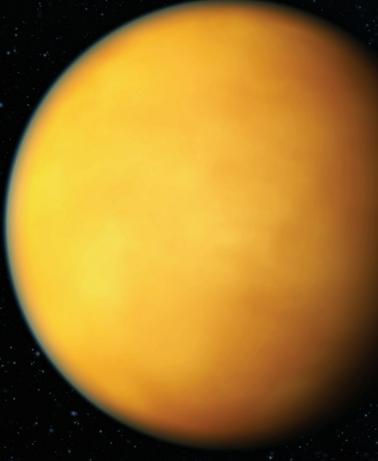
Apex Tile



Flank Tile

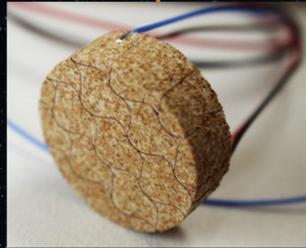


TITAN

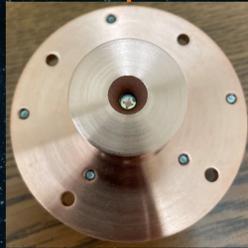


DrEAM

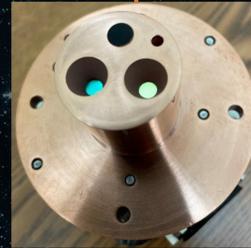
Dragonfly Entry Aerosciences Measurements (DrEAM) is an instrumentation suite for the Dragonfly rotorcraft mission to Titan set to launch in 2028.



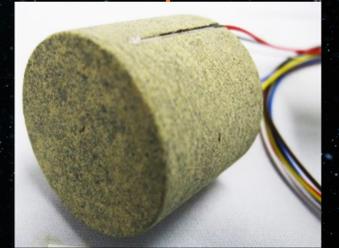
Backshell Plug



Broadband Radiometer

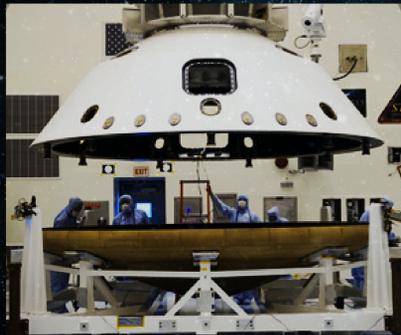
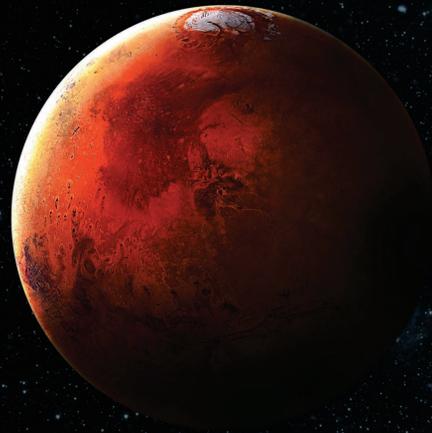


Aerothermal Sensor



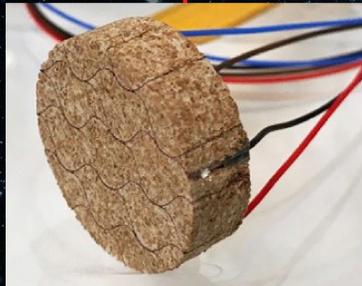
Heatshield Plug

MARS



MEDLI2

Mars Entry Descent and Landing Instrumentation 2 is the TPS instrumentation suite for the Mars 2020 entry vehicle and builds off the successful heat shield instrumentation for MSL (MEDLI).



Backshell Plug



Heat Flux Sensor



Heatshield Plug



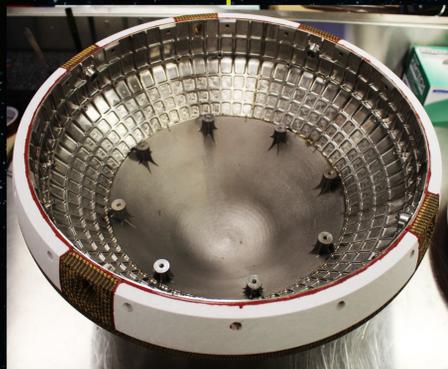
Radiometer

VENUS



Commercial Missions

Rocket Lab



Venus Life Finder is intended to study the Venusian cloud layer and is entirely funded by Rocket Lab, a private launch provider. Rocket Lab entered into a space act agreement with NASA ARC to design and fabricate the TPS for the entry vehicle.

NASA Missions

VISTA

NASA ARC is providing heatshield instrumentation for NASA's DAVINCI (Deep Atmosphere Venus Investigation of Noble gases, Chemistry and Imaging) Mission.

