

## MOSIF Structure Thermal Test Model

Bepi Colombo is an interplanetary mission to Mercury jointly implemented by the European space agency ESA and the Japanese space agency JAXA. The mission includes the four main modules:

- Mercury Transfer Module (MTM)
- Mercury Planetary Orbiter (MPO)
- Sunshield (MOSIF)
- Mercury Magnetospheric Orbiter (MMO)

These four modules will be separated after the arrival at Mercury. During the transfer from the Earth MOSIF will protect the MMO from sun radiation.

Due to delays in the delivery of the MOSIF structure PFM, the industrial prime and ESA decided to procure a specific thermal test model of the MOSIF structure, referred to as MSTTM, in order to keep the thermal test schedule. SpaceTech has been selected for the MSTTM delivery and successfully performed all required activities within the tight schedule of only 3 months:

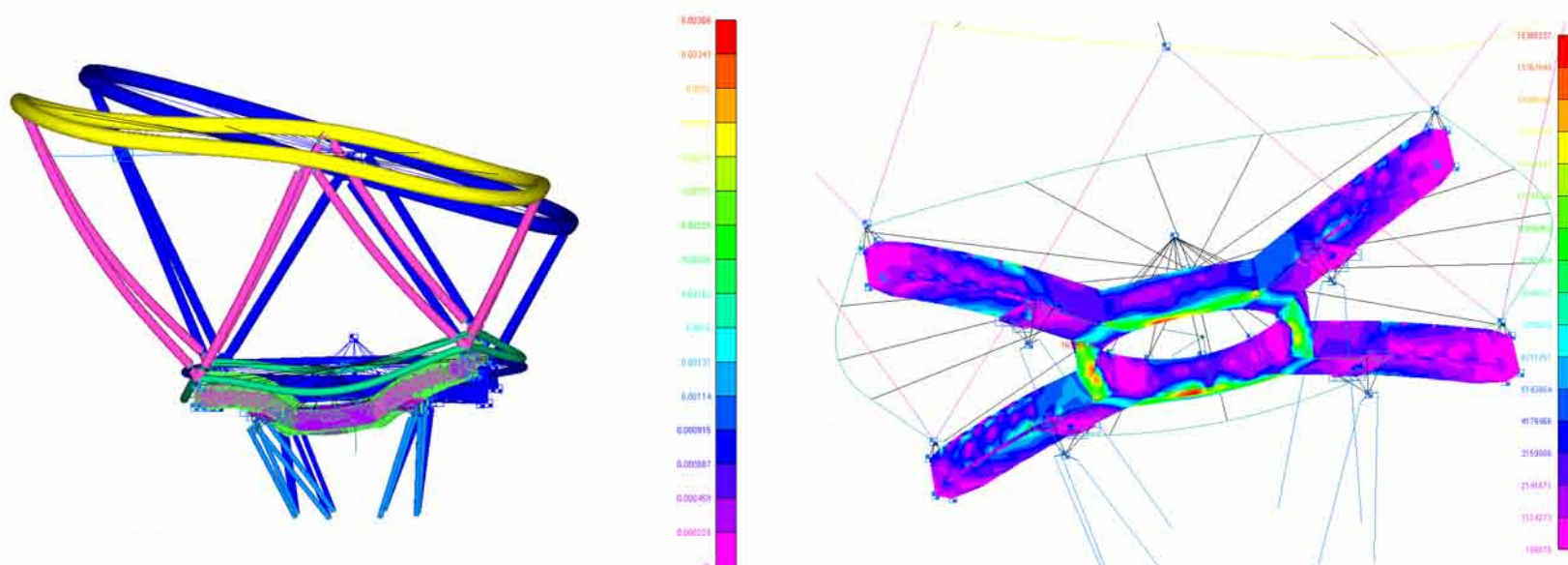
- PFM Design Adaptation
- Thermal and Strength Analysis
- Parts Procurement/Manufacturing and Integration
- Coating
- Final Assembly on ESTEC Site



MSTTM MLI fit-check in the STI cleanroom



MSTTM integration at ESA



MSTTM strength analyses

In October 2010, the MOSIF Structure/Thermal Test Model has been delivered in-schedule to ESA which stated that the SpaceTech 'performance in designing, and building the MSTTM was impressive'.

### MOSIF Structure Thermal Test Model performance summary

Parameter	Characteristics / Performance
Number of Models	1
Structure Mass	Adapter: 25 kg Sunshield Frame: 62 kg
Structure Dimensions	3110 mm x 3070 mm x 2120 mm
Thermal Properties	Similar to Flight Model
Surface Coating	Chemglaze A276
Interfaces	Equal to Flight Model
Duration from start to DRB	3 months



MSTTM with MMO in the large sun simulator at ESTEC