



MECHANICAL SYSTEMS BRANCH



- End-to-end mechanical systems mission design and implementation, including Product Design Lead roles on key suborbital and special orbital projects, technology development efforts, and spacecraft sub-systems
- Broad support services in the areas of:
 - Mechanical systems design and development
 - Structural analysis
 - Thermal engineering
 - Assembly, integration and testing
- Leadership in mechanical technology development investments that enable and expand the mission capabilities of WFF
- Development and management of world-class integration and testing facilities at WFF

Branch Head:	David Wilcox	7-1314	David.A.Wilcox@nasa.gov
Alternate POC:	Mark Cording	7-1310	
Technology:	Chris Shreves	7-2184	
Secretary:	Kim Ferry	7-1516	

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MECHANICAL SYSTEMS BRANCH



➤ 18 Civil Servants

- 1 Branch Head, 1 Admin/Clerical
- 12 Engineers
 - 4 Senior Mechanical Systems Engineers
 - 2 Structural Analysts
 - 5 Junior Mechanical Systems Engineers
- 4 Technicians
 - 1 Mechanical Designer
 - 2 Range Operations Technicians
 - 1 Integration, Assembly & Test Technician

➤ 11 Support Contractors

- (CSC/Hawk Institute of Space Science)
- 4 Mechanical Systems Engineers
- 1 Senior Structural Analyst
- 5 Technicians (Thermal Vac/Integration/Fabrication)



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➤ Tools of the Trade

➤ Design:

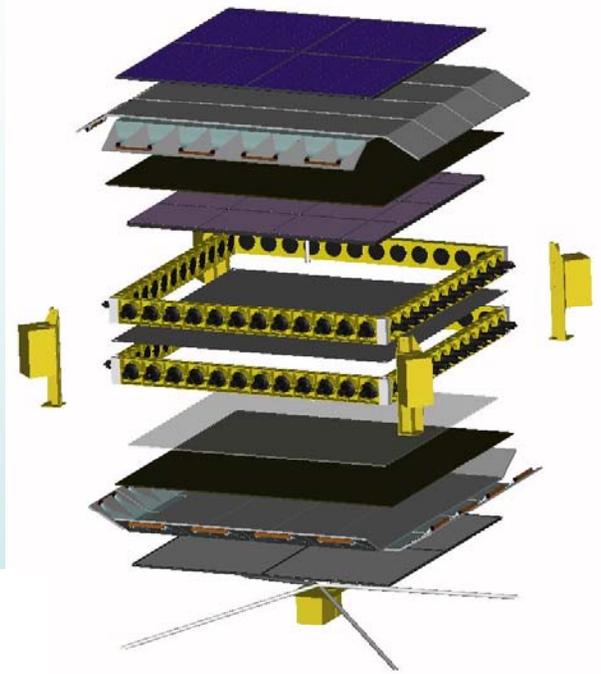
- Autodesk Inventor
- Pro-Engineer

➤ Analysis:

- NASTRAN (FEMAP Pre and Post)
- Thermal Desktop
- LS-DYNA
- FLUENT

➤ Other:

- Matlab
- Labview
- Mathcad



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➤ Multi-Purpose Payload Processing Facility (MPPF)

- 100K Cleanroom/High Bay
- Ballooncraft & Small S/C Integration Areas
- Thermal Vac Testing
- Materials Lab
- Project Support: Machine Shop, Battery Lab, ESD Work Areas

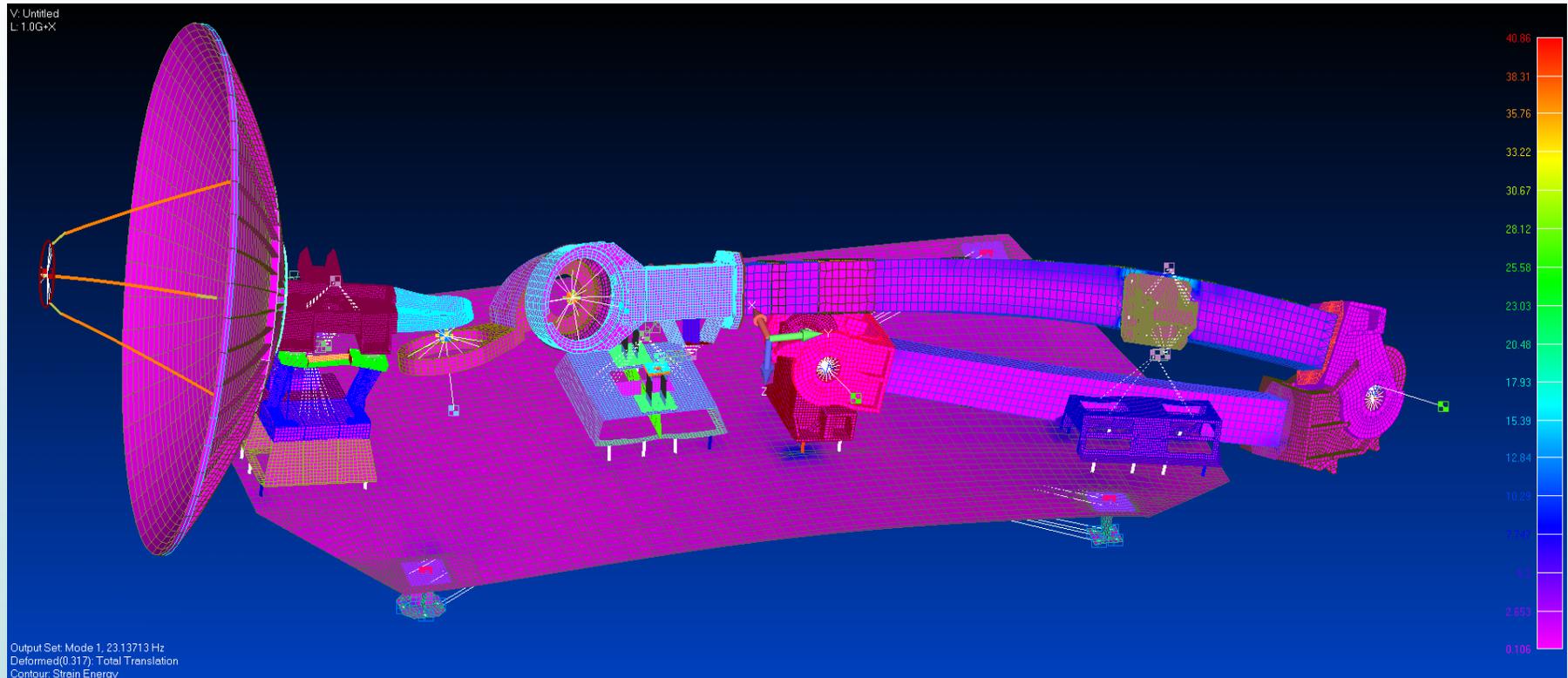




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GPM Antenna Stress Analysis by Victor A. Eyo



MECHANICAL SYSTEMS BRANCH



Code 548, Mechanical Systems Branch

- Over the past 2 years, our Mechanical System Branch/Code 548 at the WFF has had the unique opportunity to work with the NESC to develop the Max Launch Abort System (MLAS) for the Constellation Project. The MLAS team was composed of several hundred civil servants and contractors from across the county. Code 548 served major roles in defining the vehicle architecture, designing flight systems, and designing mechanical ground support equipment (GSE), in addition to serving in lead roles during integration and testing.



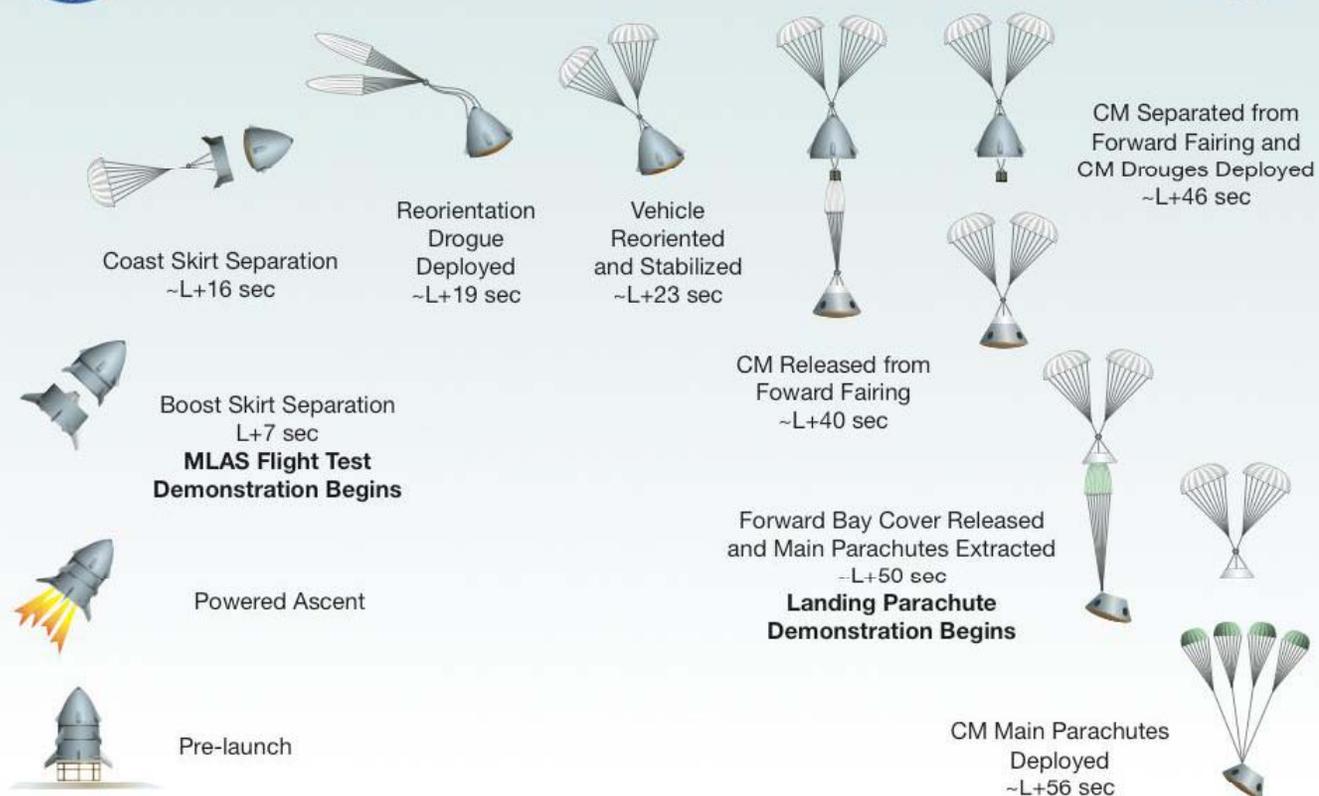
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Concept of Operations



Max Launch Abort System

Note: Parachute suspension lines and risers not drawn to scale.



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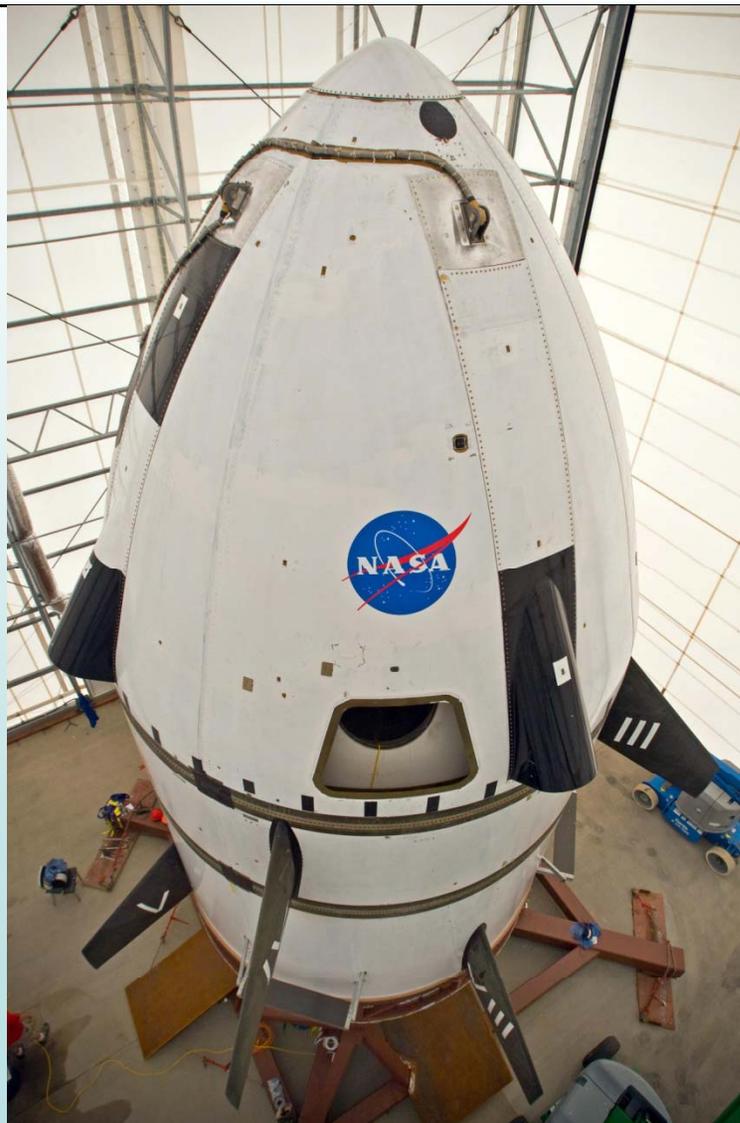
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Launched from Wallops Island



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Since 1991, NASA has been operating a Lockheed Martin P-3B Orion Aircraft for research activities in earth, atmospheric, and space sciences. This aircraft, extensively modified as a flying laboratory, is based at the NASA Wallops Flight Facility (WFF). It is operated primarily for the benefit of researchers whose proposals have been previously approved by NASA headquarters. The program is managed by Code 830. Code 548 are responsible for engineering design and analysis.



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