



NASA Ames Engineering Directorate (Code R)

Spaceflight Division (Code RS)

Organizational Overview



SILICON
VALLEY

AMES RESEARCH CENTER



NASA Ames Research Center

Founded 1939



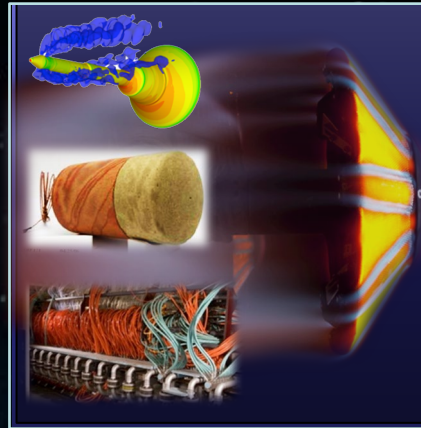
Core Competencies



Air Traffic Management



Entry Systems



Advanced Computing and IT Systems



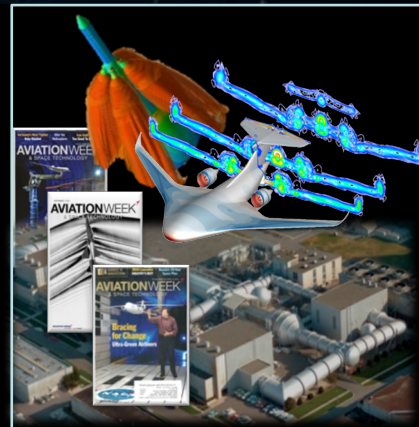
Intelligent and Adaptive Systems



Cost-Effective Space Missions



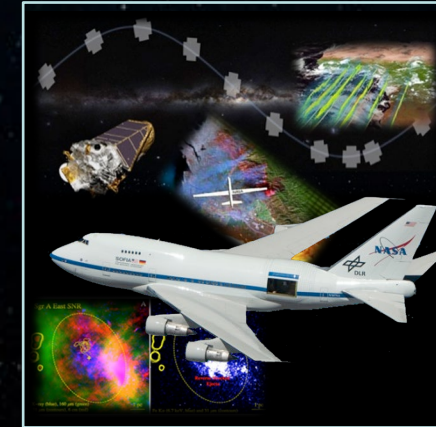
Aero sciences

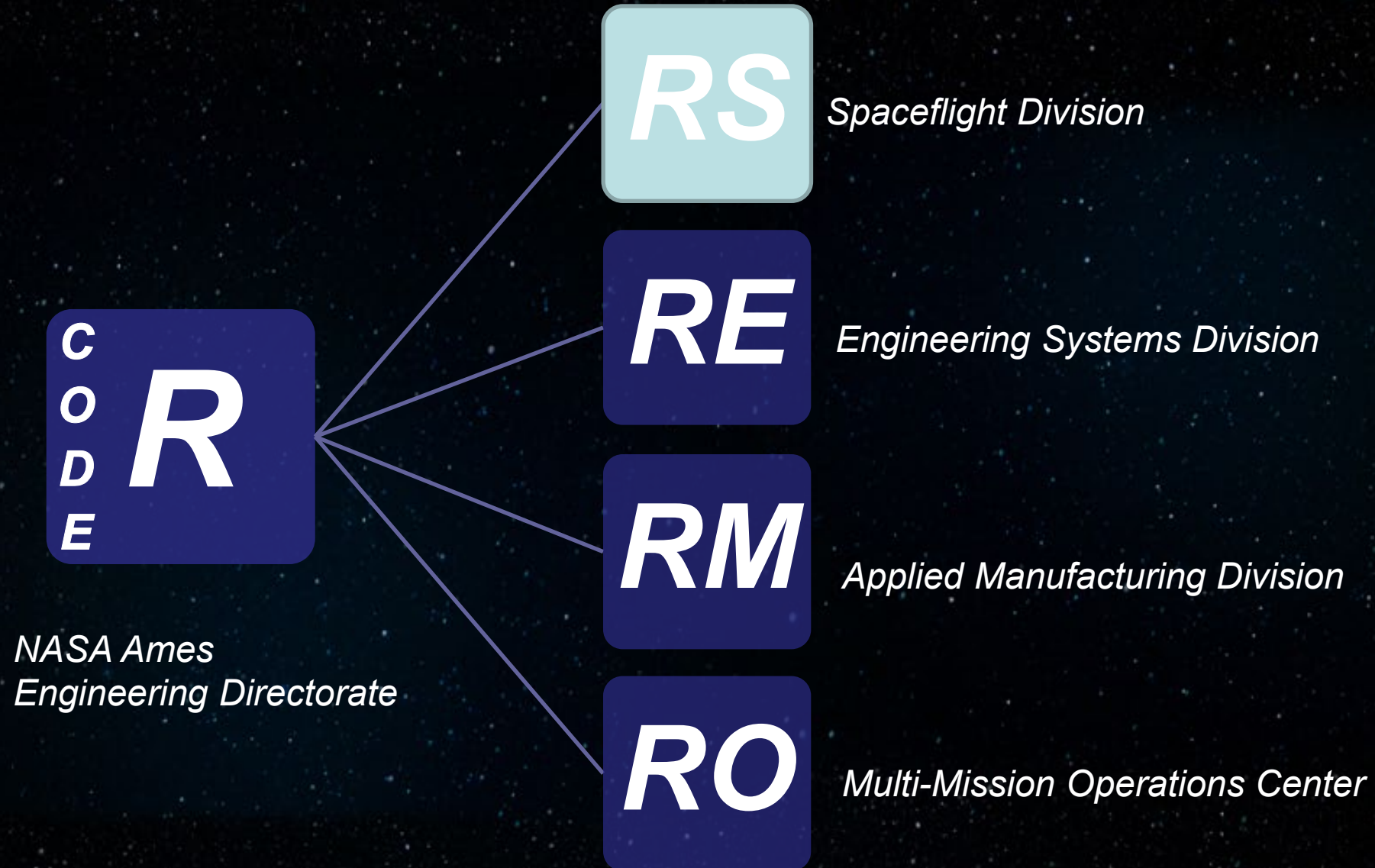


Astrobiology and Life Sciences



Space and Earth Sciences



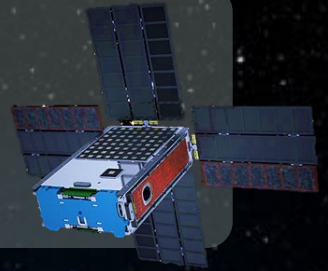


Spaceflight Division (Code RS)

Chief: Sally Cahill
Deputy: David Mauro
Ops: Sig Lokensgard

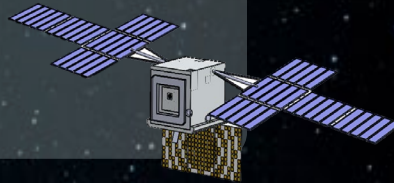
Spaceflight
Projects
Office

Technical Area Lead:
Ben Bradley



Mission
Design
Center

Technical Area Lead:
Alan Cassell



Flight
Dynamics

Technical Group Lead:
Andres Dono-
Perez [MEI]

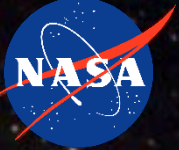


System
Engineering
Integration
& Testing

Technical Area Lead:
Stephen Walker

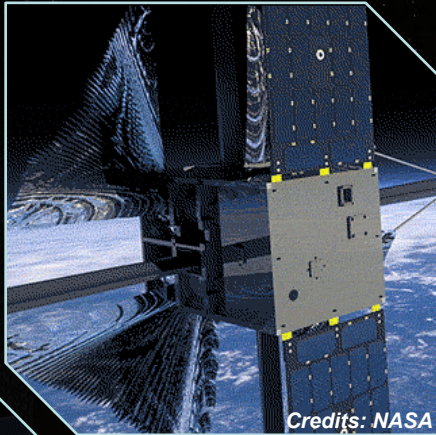


The Spaceflight Projects Office – *the managers that make it all happen*



The Spaceflight Division provides project management for spaceflight projects through a Spaceflight Projects Office (SPO).

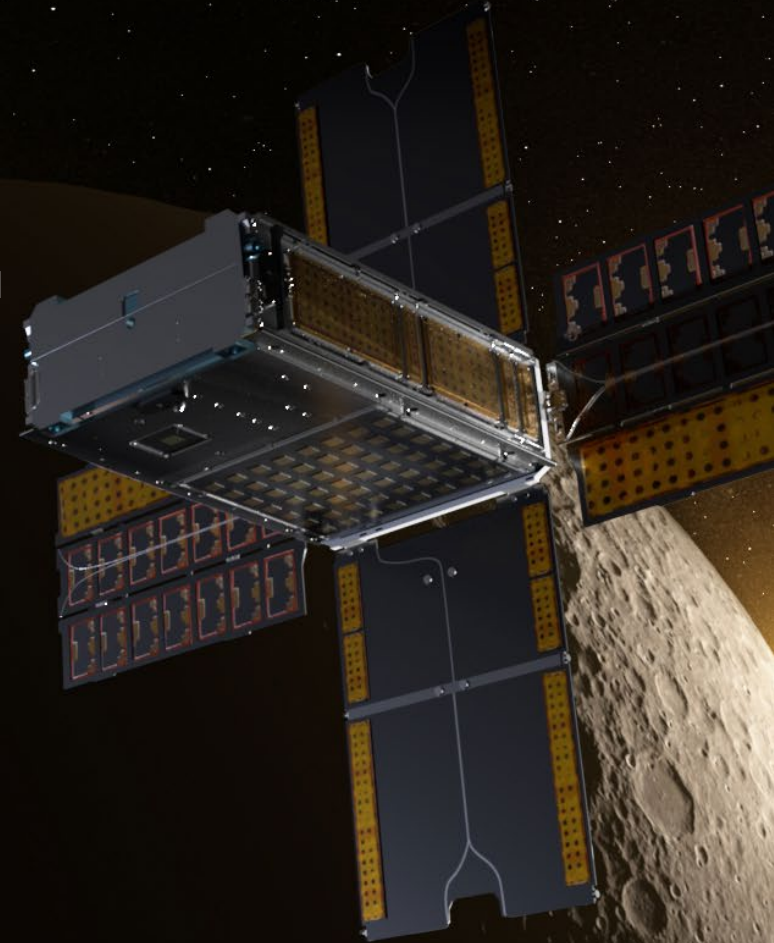
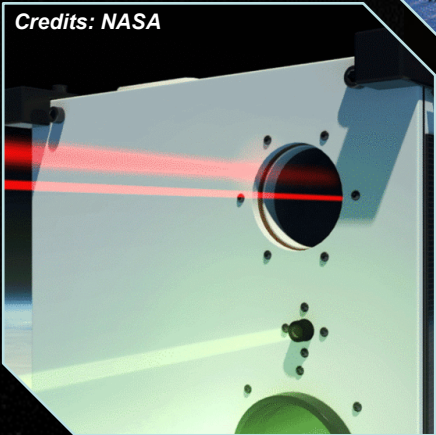
Credits: NASA/Dominic Hart



Our capabilities include project and technical management of:

- Small Spacecraft (from design and development through deployment and operations)
- International Space Station (ISS) science payloads and mission operations
- On-orbit technology demonstrations
- Swarm technology
- Mission operations

Credits: NASA



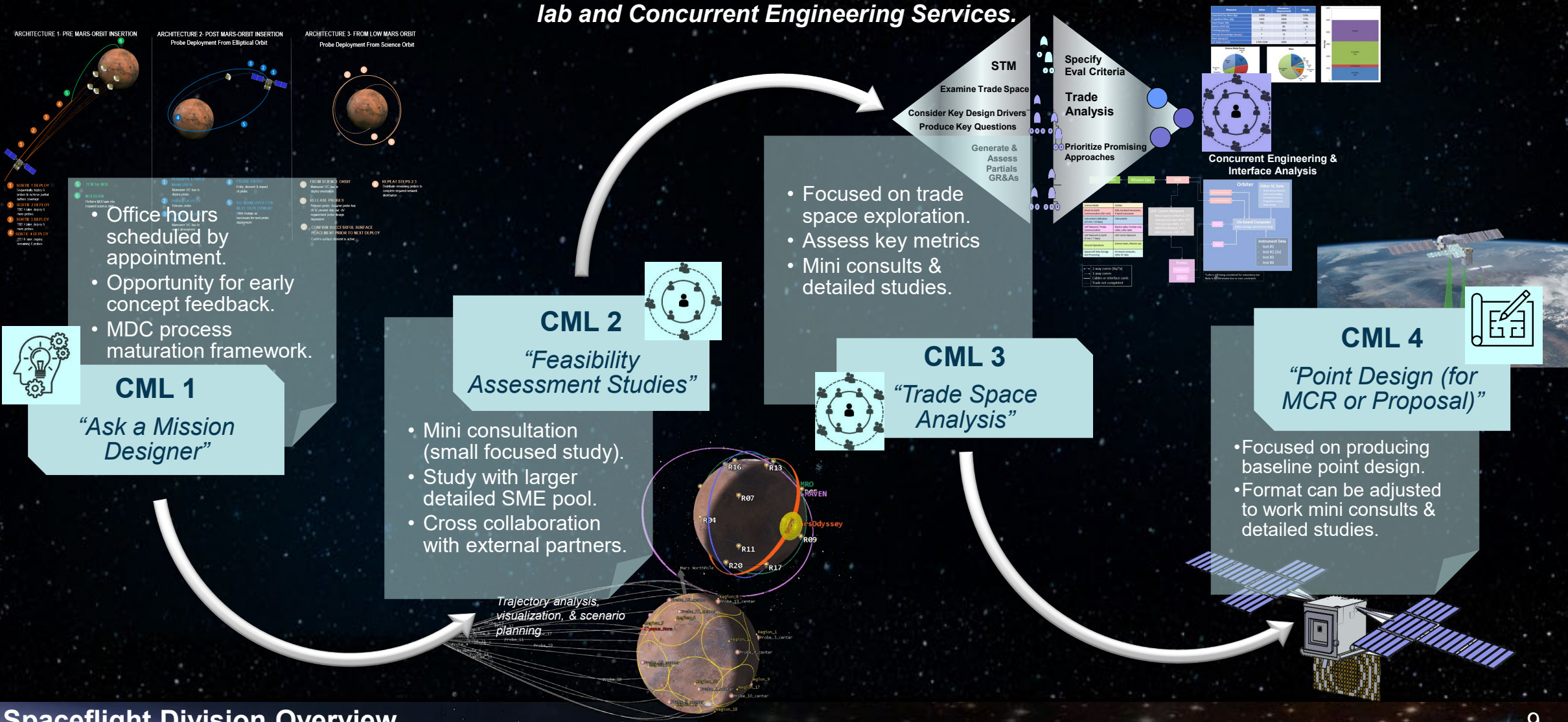
Credits: NASA/Daniel Rutter

We partner with universities, industry, and government agencies

The Mission Design Center- where ideas takes life



The NASA Ames Mission Design Center (MDC) is a multi-disciplinary, concurrent engineering Technical Area within the Spaceflight Division that specializes in conceptual mission design. The MDC focuses on the following activities: Spaceflight mission concept idea lab and Concurrent Engineering Services.



Flight Dynamics Team- *where the orbital magic happens*



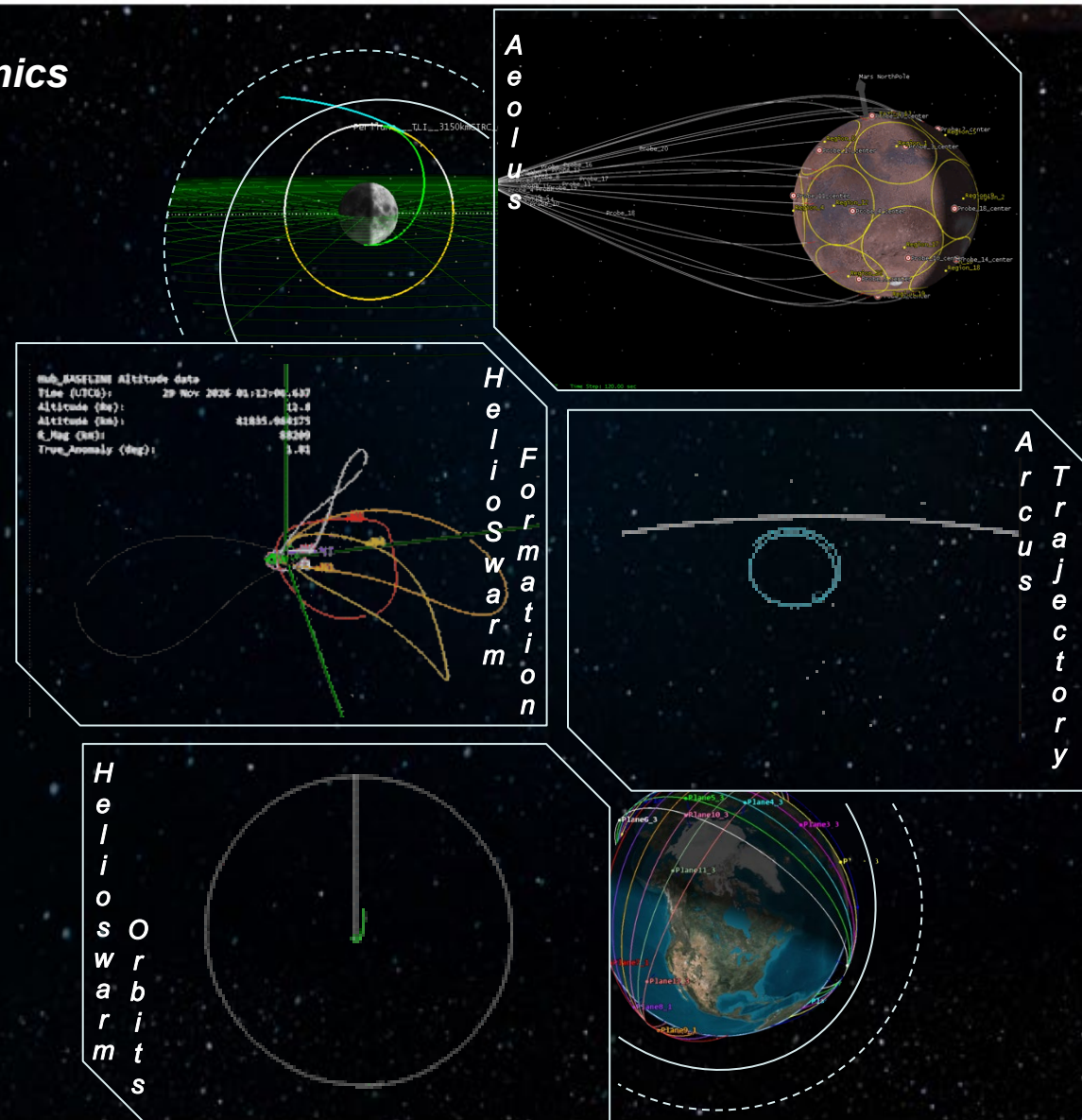
The Flight Dynamics (FD) team provides full orbital mechanics support in all mission phases.

The team has extensive experience in all aspects of astrodynamics including:

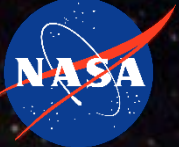
- Trajectory Design – Earth transfers, *cislunar* and interplanetary
- Orbital analysis – to maximize science return
- Relative motion – including constellation and swarms
- Navigation –Earth and Deep Space
- Tool development –Monte Carlo, orbit stability, swarm motion

Some recent (2023) missions include:

- HelioSwarm (trajectory design, relative motion and tool development)
- BioSentinel (trajectory design, navigation and tool development)
- Starling (orbit analysis and navigation)
- ACS3 (orbit analysis and navigation)



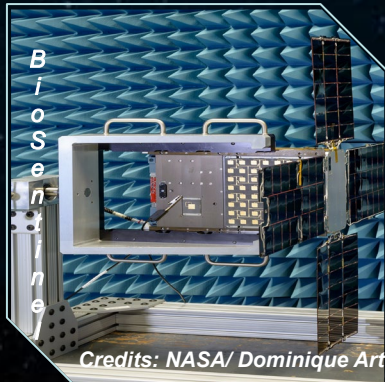
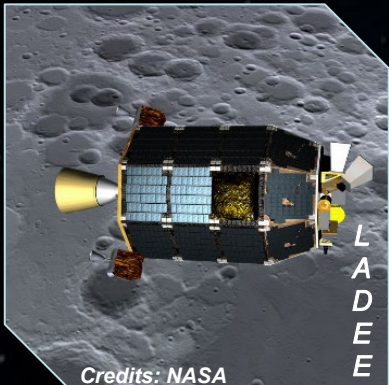
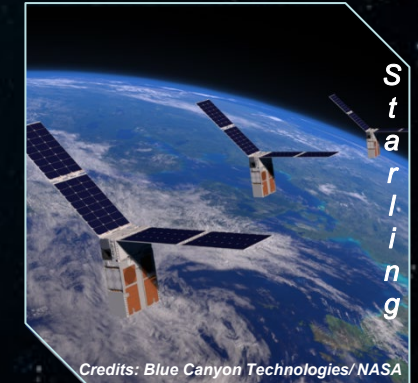
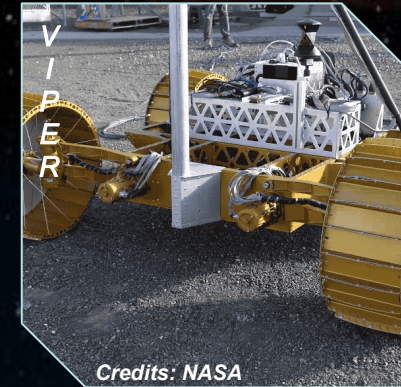
Systems Engineering Integration Testing (SEIT) - *where technical leadership resides*



Systems engineering includes the engineering and technical management processes that consider the interface relationships across all elements of the system, other systems, or as a part of a larger system

The team is made up of individuals with broad technical backgrounds and diverse experiences to tackle and manage a variety of current and recent projects:

- BioSentinel
- Starling
- Near Infrared Volatile Spectrometer Subsystem (NIRVSS)
- ArcJet Modernization
- Volatiles Investigating Polar Exploration Rover (VIPER)



- Lunar Atmosphere and Dust Environment Explorer (LADEE)
- Kepler
- Stratospheric Observatory for Infrared Astronomy (SOFIA)
- Pathfinding for Airspace with Autonomous Vehicles (PAAV)

