

**Research Operations,
Maintenance, and
Engineering (ROME) Follow-
on**

Industry Day Site Visit

April 17-20, 2012

Agenda

- Tuesday, April 17, 2012
 - 09:00-09:30: Opening Remarks/Center Overview – Reid Conference Center
 - 09:30-12:30: Site Visit Tour
 - 12:30-1:00: Break
 - 1:00-5:00: Industry Discussions – New Town Rooms 201/301
- Wednesday, April 18, 2012 thru Friday, April 20, 2012
 - 08:00-6:00: Industry Discussions – New Town Rooms 201/301

Ground Rules/General Instructions

- Informal Event
 - Formal Pre-proposal conference to be held during the solicitation phase
- Questions and answers WILL NOT be posted to FedBizOps
 - Please ask any questions to the group; answers will be provided to the group real-time
- Assigned into two groups during sign in, **RED** and **BLUE**
 - Site Visit Tour Schedule on last slide; PLEASE stay in your group
- These are active facilities; some will require PPE. Please exercise caution!
- Pictures are permitted
- No restroom breaks on tour
- Reminder of the ESTIMATED key milestone dates:
 - Draft RFP Issuance – November 2012
 - PreProposal Conference – November 2012
 - RFP Issuance – January 2013
 - Award – August 2013



LANGLEY RESEARCH CENTER OVERVIEW



Industry Day Site Visit
George Finelli, Director, Center Operations Directorate
April 17, 2012

NASA Langley at a Glance (2012)



Founded in 1917

1st civil aeronautical research lab

~\$831m PY2012 Budget

~\$804m NASA Langley budget

~\$ 27m External business

~3,600 Workforce

~1,900 Civil Servants

~1,700 Contractors (on/near-site)

(~250 students)

Langley's Economic Impact (2011)

National economic output of ~ \$2b and generates over 17,000 high-tech jobs

Virginia economic output of ~ \$1b and generates over 9,000 high-tech jobs

Infrastructure/Facilities

788 acres, 169 Buildings

~\$3.3b replacement value

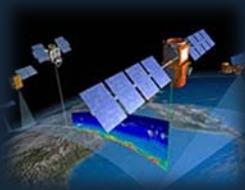
Aeronautics

44%



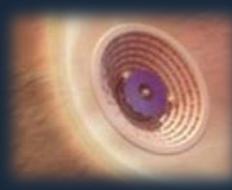
Science

28%



Space Tech

15%



Human Exploration

12%



Education

1%



Cross-Agency Support Program & Construction/Environmental Compliance & Restoration

- Center Management & Operations

- Agency Management & Operations

- Construction/Environmental Compliance & Restoration

NASA Langley Research Center Organization



NASA Langley Research Center Organization

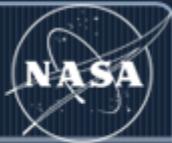
We Deliver on Today's Commitments and Prepare for Tomorrow's Opportunities



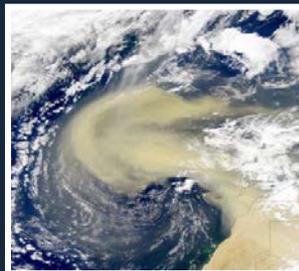
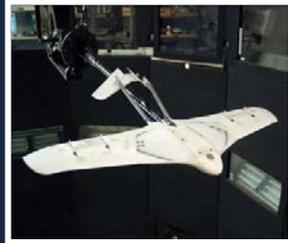
PENDING

3-07-12

NASA Langley Core Competencies

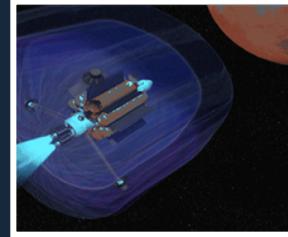


Aerosciences Research for Flight in All Atmospheres

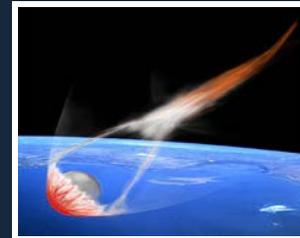


Characterization of all Atmospheres (Lasers & LIDAR)

Aerospace Systems Analysis

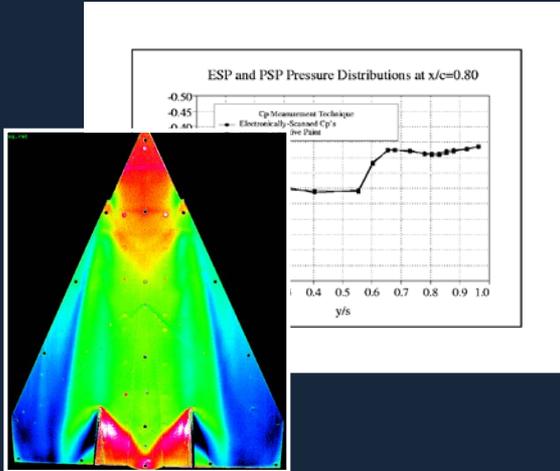


Entry, Descent & Landing

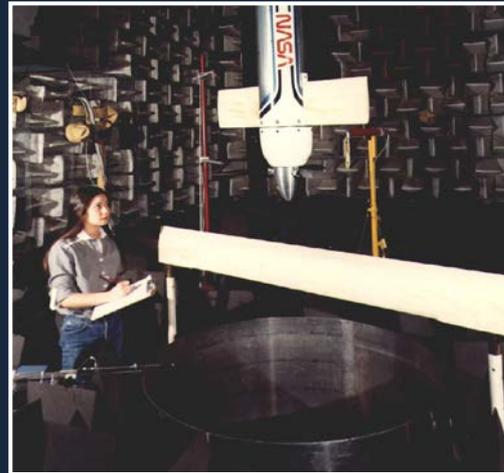


Aerospace Structural & Material Concepts

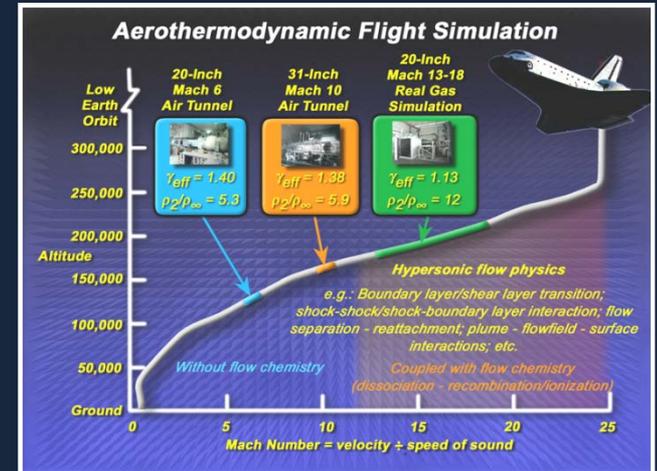
Aerodynamics



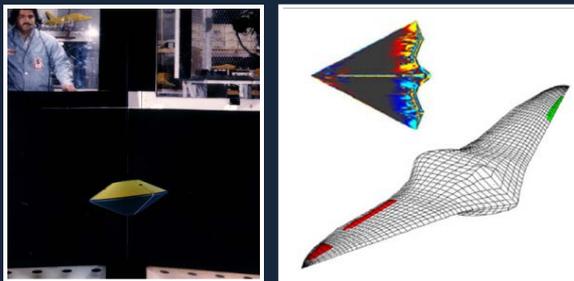
Acoustics



Aerothermodynamics



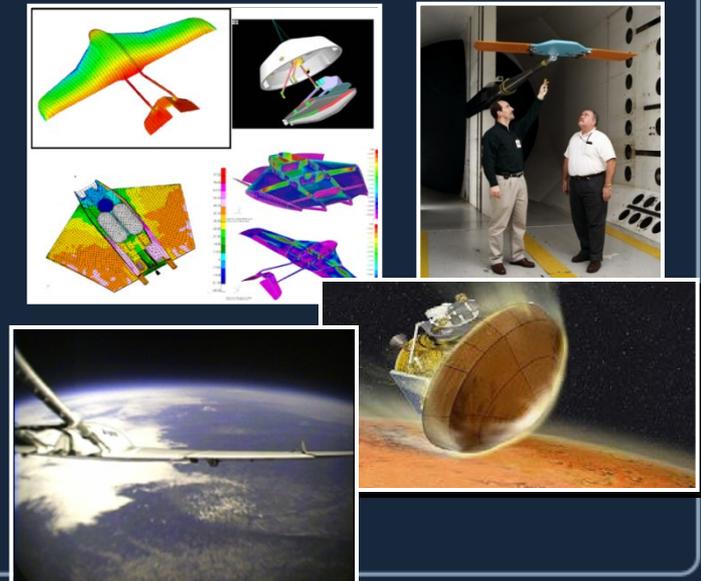
Flight Dynamics, Guidance & Control



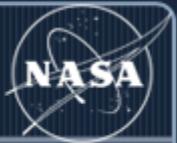
Flight Systems



Systems Engineering



Characterization of All Atmospheres



Climate and Radiation



Atmospheric Chemistry



Lasers and LIDAR



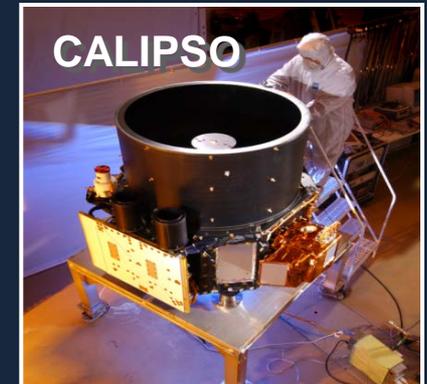
In-situ and Remote Sensing



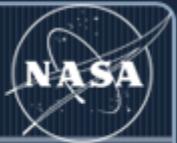
Atmospheric Science Data Management



Systems Engineering



Structures & Materials



**Materials
synthesis
& processing**



**Analytical
and computational
methods**



**Concept behavior,
durability, & damage
tolerance**

**Nondestructive
evaluation**



**Structural, impact, &
landing dynamics**

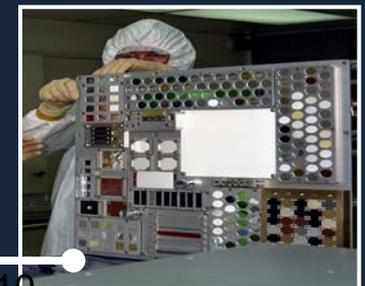


**Aeroelasticity
& unsteady
aerodynamics**

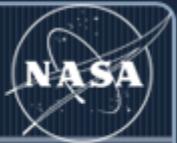


**Experimental
methods
& laboratory
operations**

**Flight systems
engineering for
space**



NASA Langley Facilities



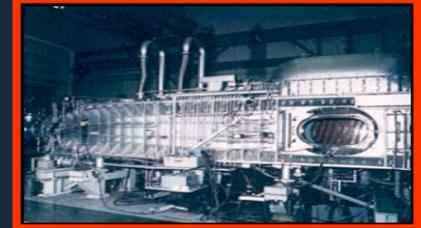
14 x 22 Foot Subsonic Tunnel
Subsonic, Alternate Uses



National Transonic Facility
High Reynolds Number Flow
Nationally Unique



LaRC Unitary Plan Wind Tunnel
Supersonic Speed Range



Aerothermodynamic Complex
Exploration Workhorse

Subsonic

Transonic

Supersonic

Hypersonic

National Assets needed to meet the needs of the Agency, DoD, and Industry



Flight Simulation Facilities



20-Foot Vertical Spin Tunnel
Spin Characteristics & Dynamic Stability
Nationally Unique



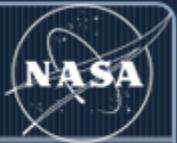
Transonic Dynamics Tunnel
Aeroelasticity & Flutter
World Unique



8-Ft High Temperature Tunnel
Large-scale Hypersonics & Propulsion

Specialty Facilities

Human Exploration and Operations @ NASA Langley Research Center

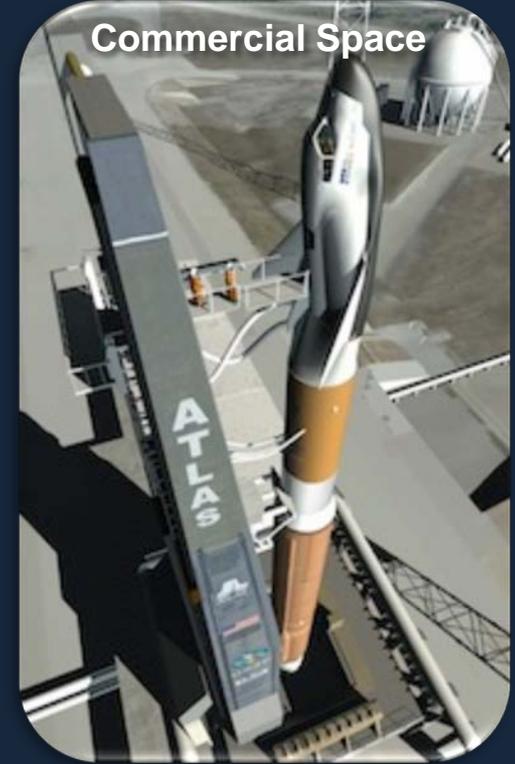


Space Launch System

- Wind Tunnel Testing
- Aerodynamics



- Launch Abort System
- Thermal Protection System
- Test Article Splash Testing
- Guidance Navigation & Control



Commercial Space

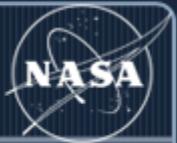
- Commercial Crew
- Commercial Cargo



Advanced Exploration Systems

- Composites
- Extravehicular Activity
- Habitat Demonstration Unit
- Multi-Mission Space Exploration Vehicle
- Radiation Protection

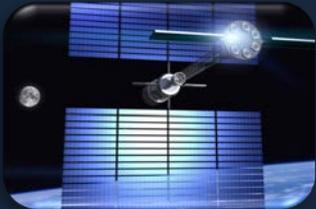
Space Technology Development @ NASA Langley Research Center



Lightweight Materials & Structures

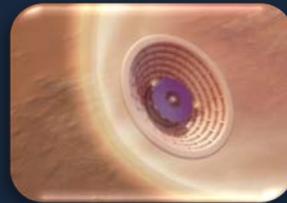


Inflatable Structures
Advancement Research

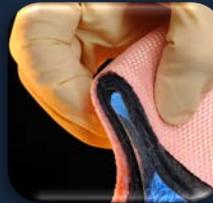


Ultra-Large Solar
Array Structures

Entry, Descent & Landing Systems



HIAD (Hypersonic Inflatable Aerodynamic Decelerators)

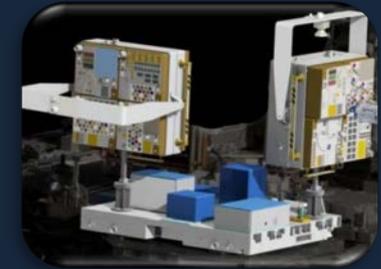


ALHAT
(Autonomous Landing / Hazard
Avoidance Technology)



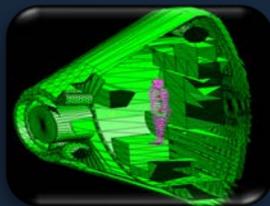
MEDLI
(MSL Descent
Landing Instrumentation)

ISS Applications



MISSE-X
(Materials International
Space Station Experiment-X)

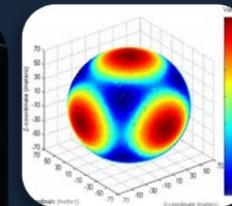
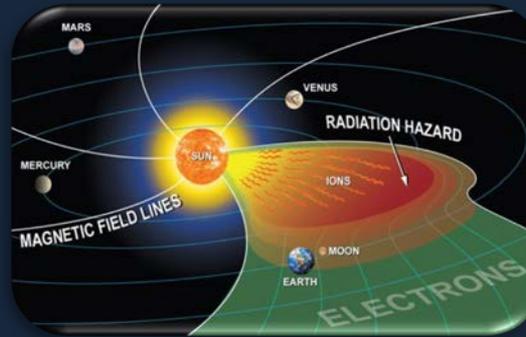
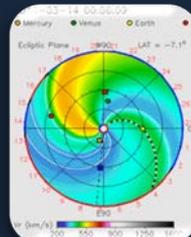
Radiation Protection



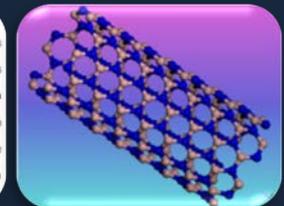
Monte Carlo
Radiation Analysis



Integrated Solar Energetic
Proton Event Alert/
Warning System



Electrostatic
Gossamer
Structures for
Radiation Shielding



BNNT (Boron Nitride
Nanotube) Materials
for Radiation
Shielding

Langley Aeronautics Contributions



Hypersonics



Supersonics



Subsonic Fixed-Wing



Rotary-Wing



UAS in the NAS



Vehicle Systems Safety Technologies



System-Wide Safety and Assurance Technologies



Atmospheric Environment Safety Technologies



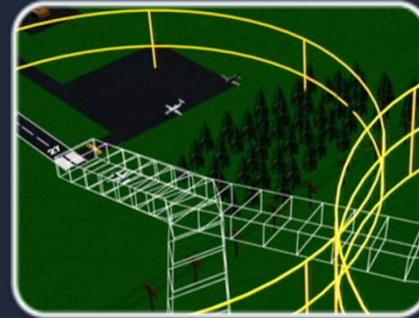
Environmentally Responsible Aviation



Systems Analysis, Integration and Evaluation



Concepts and Technology Development



Test Facilities



Site Visit Tour Schedule

RED

- 09:00-09:30: Reid
- 09:40-10:15: NTF
- 10:25-11:00: 14x22
- 11:10-11:30: New Town
- 11:40-11:55: Compressor
- 12:00-12:15: 1247D Labs
- 12:15-12:25: Return to Reid

BLUE

- 09:00-09:30: Reid
- 09:40-10:15: 14x22
- 10:25-11:00: NTF
- 11:10-11:25: Compressor
- 11:30-11:45: 1247D Labs
- 11:55-12:15: New Town
- 12:15-12:25: Return to Reid