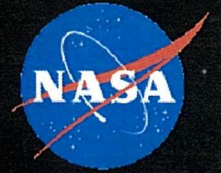
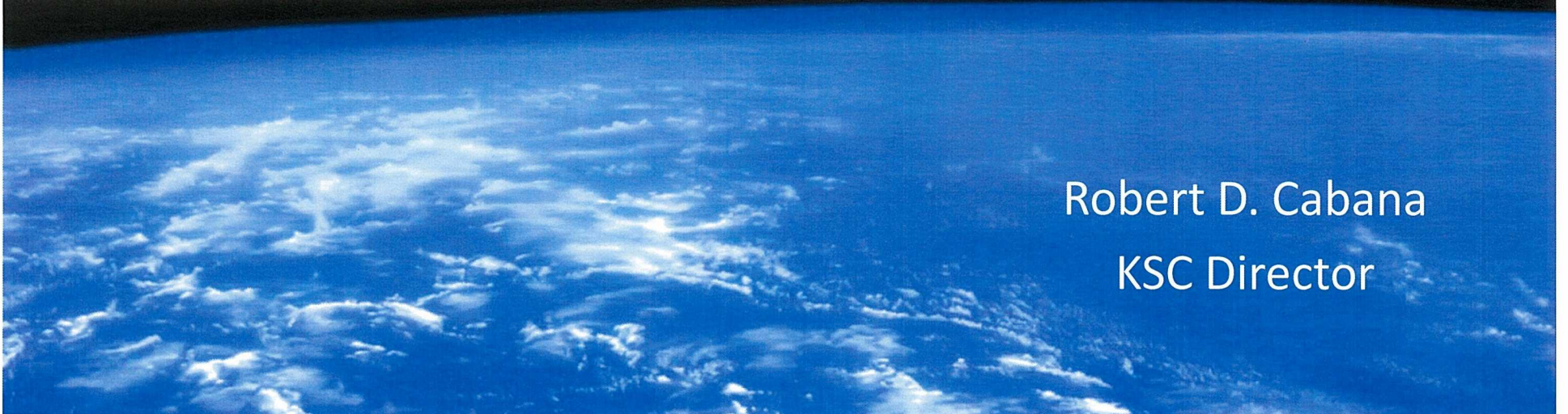


National Aeronautics and Space Administration



Commercial Crew Development

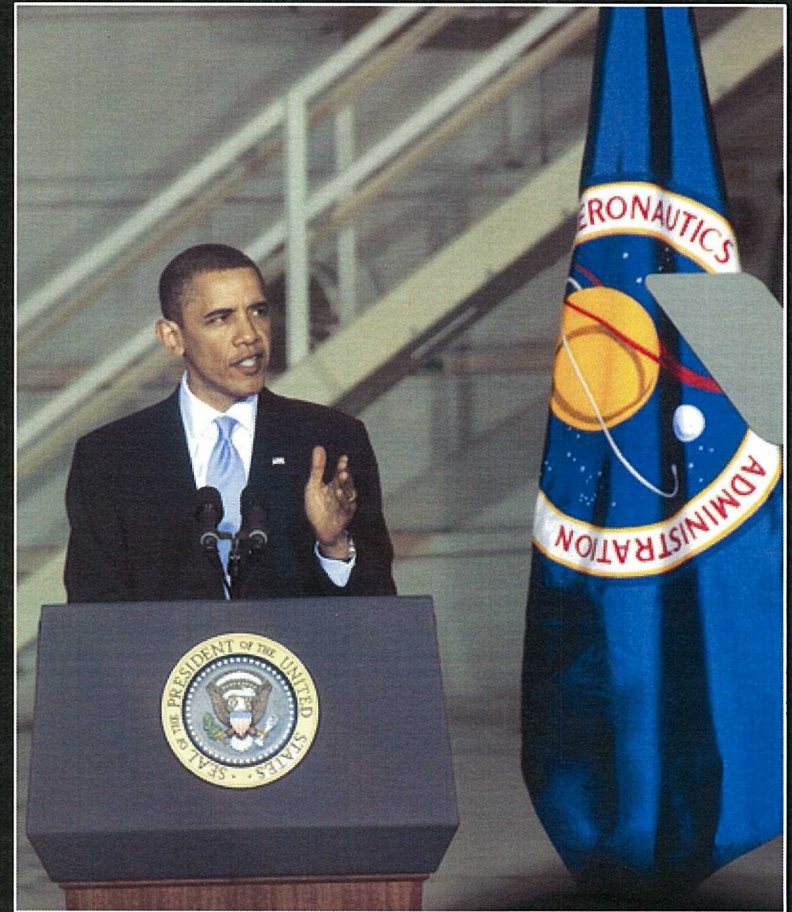
Robert D. Cabana
KSC Director



National Space Policy of The United States



“Fifty years after the creation of NASA, our goal is no longer just a destination to reach. Our goal is the capacity for people to work and learn and operate and live safely beyond the Earth for extended periods of time, ultimately in ways that are more sustainable and even indefinite.”



- President Barack Obama, April 15, 2010

National Space Policy Principle



“A robust and competitive commercial space sector is vital to continued progress in space. The United States is committed to encouraging and facilitating the growth of a U.S. commercial space sector that supports U.S. needs, is globally competitive, and advances U.S. leadership in the generation of new markets and innovation-driven entrepreneurship.”

2010 National Space Policy of United States of America

Civil Space Guidelines



“Seek partnerships with the private sector to enable safe, reliable, and cost-effective commercial spaceflight capabilities and services for the transport of crew and cargo to and from the ISS;”

2010 National Space Policy of United States of America

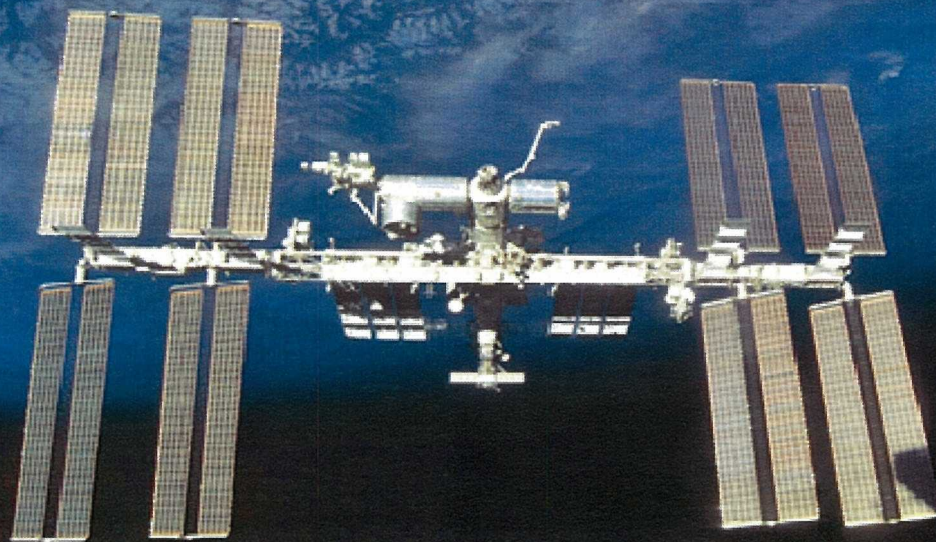
Current State of Commercial Space



- The U.S. Government procures commercial launch services for:
 - Scientific research
 - Department of Defense
 - University
 - Communication Satellites



Current State of Commercial Space



NASA has initiated the procurement of commercial launch services to the International Space Station for cargo resupply.



Current ISS Resupply Launch Vehicles



Shuttle
Retire 2011



Falcon 9
& Dragon



Taurus II
& Cygnus



Soyuz



Ariane
& ATV





HIIA &
HTV

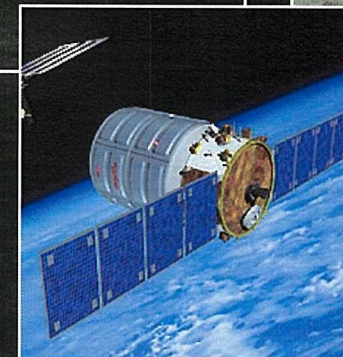
U.S. Capability
(including Commercial)

International
Partners

Commercial Orbital Transportation (COTS)



Company		
Rocket	Falcon 9	Taurus II
Module	Dragon (reusable)	Cygnus (one use)
Launch	LC 40, KSC	Wallops, Virginia
Cargo	<ul style="list-style-type: none"> ✓ Pressurized ✓ Unpressurized ✓ Return cargo 	<ul style="list-style-type: none"> ✓ Pressurized X No unpressurized X No rtn (burns up)



COTS SpaceX Demonstration Flights



- Successful Pathfinder Launch
 - 4 June 2010
- Three additional flights scheduled
 - September 2010
 - March 2011
 - May 2011



COTS Orbital Demonstration Flights



- First demonstration flight
 - second half of 2011
- Eight pressurized cargo missions



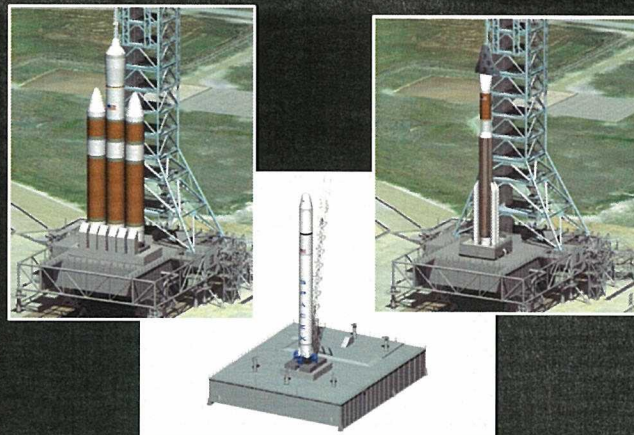
21st Century Launch Complex



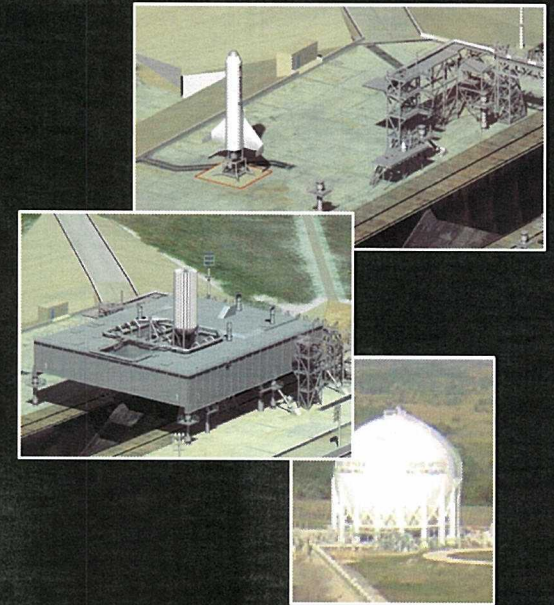
*Heavy Lift
Launch Vehicle
(HLLV)*



Launch Pad 39B



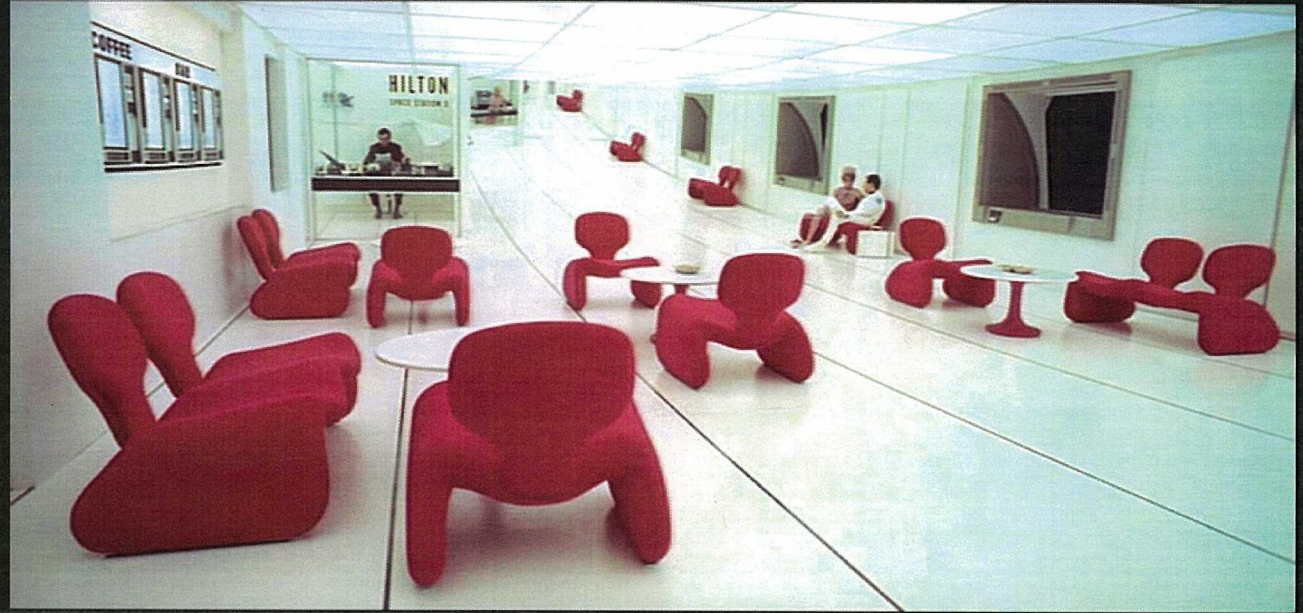
*Commercial
Crew*



*Commercial
Testing*

2001 a Space Odyssey

Commercialization
– circa 1968



Future State of Commercial Space



- NASA's commercial crew initiative will be the next major step in making this vision a reality
- A robust, vibrant, profit-making commercial enterprise.
- NASA's commercial crew initiative is the next major step.

