



Boostphase

Why Commercial Space? Why Here? Why Now?



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About Me



Fifth-generation Georgia native.

BS, Physics, Georgia Tech (*Highest Honors*).

20+ years venture capital investment experience.

- General Partner, Alliance Technology Ventures (affiliated with Georgia Research Alliance).
- 18 investments as lead investor, 11 profitable exits incl. 4 IPOs, \$650M acquisition



15 years operational experience at AT&T Bell Labs, Nortel, LICOM (*venture-backed startup*).

- Supervised startups developing first ADSL modem and one of the first cablemodems in early 1990s.

Joined Georgia Tech in 2005; Vice President of Enterprise Innovation Institute (*200-person economic development and entrepreneurship organization*) until December 2015.

Transcontinental Railroads



The government did not build the railroads.

The government (*via the U.S. Army*) contracted to be the largest customer.

- Also regulated, subsidized, guaranteed property rights, provided military protection against raids.

A “National Railroad Program” in the 1870s would have been doomed to failure.



Automobile Industry

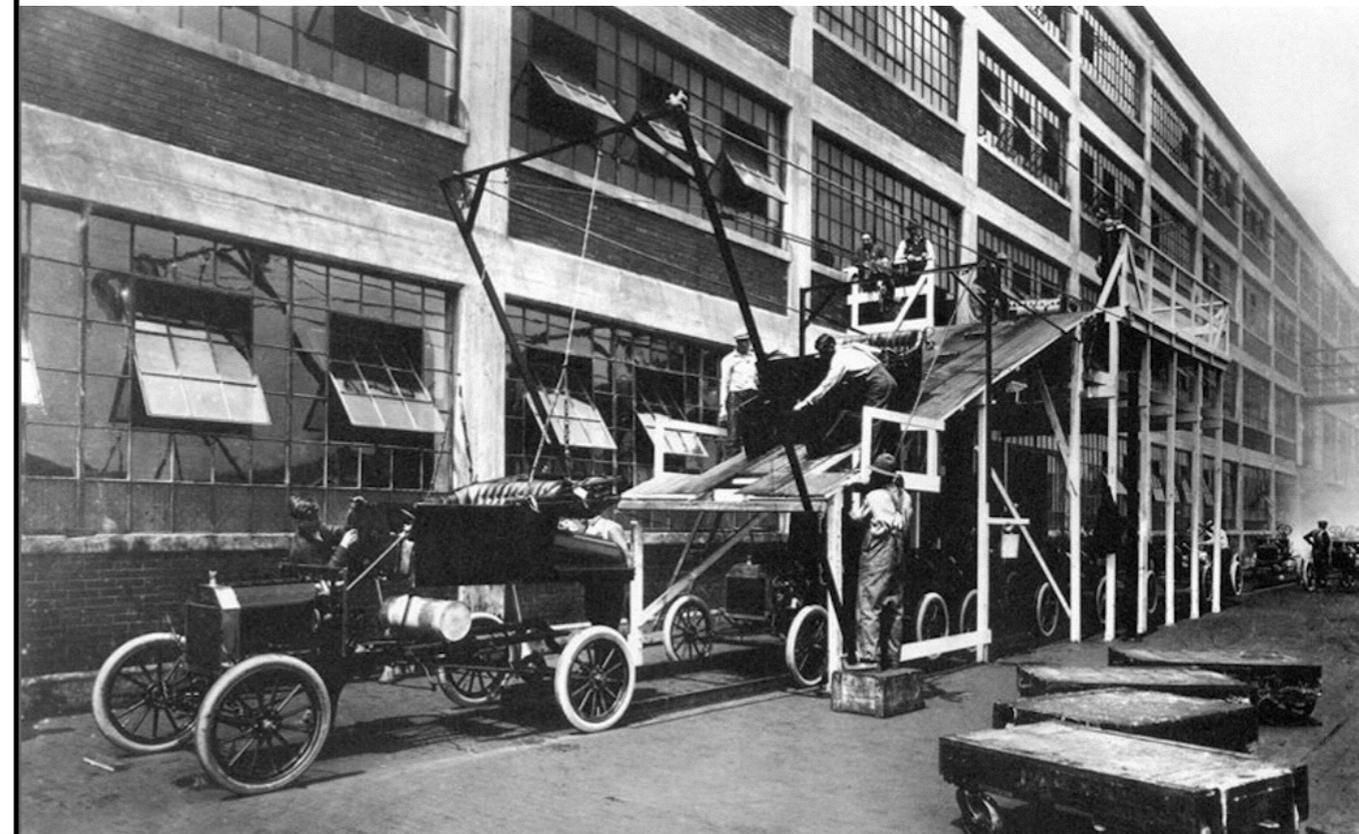


The government did not build automobiles.

Focused on infrastructure (highways) and regulating the new industry.

–Government became a large and stable customer.

A “National Automobile Program” in the 1910s would have been doomed to failure.



Aviation Industry



The government did not build airplanes.

- NACA published research, but did *not* develop airplanes or operate airlines.
- CAB (later FAA) focused on infrastructure, regulation, safety.

A “National Airplane Program” in the 1930s would have been doomed to failure.



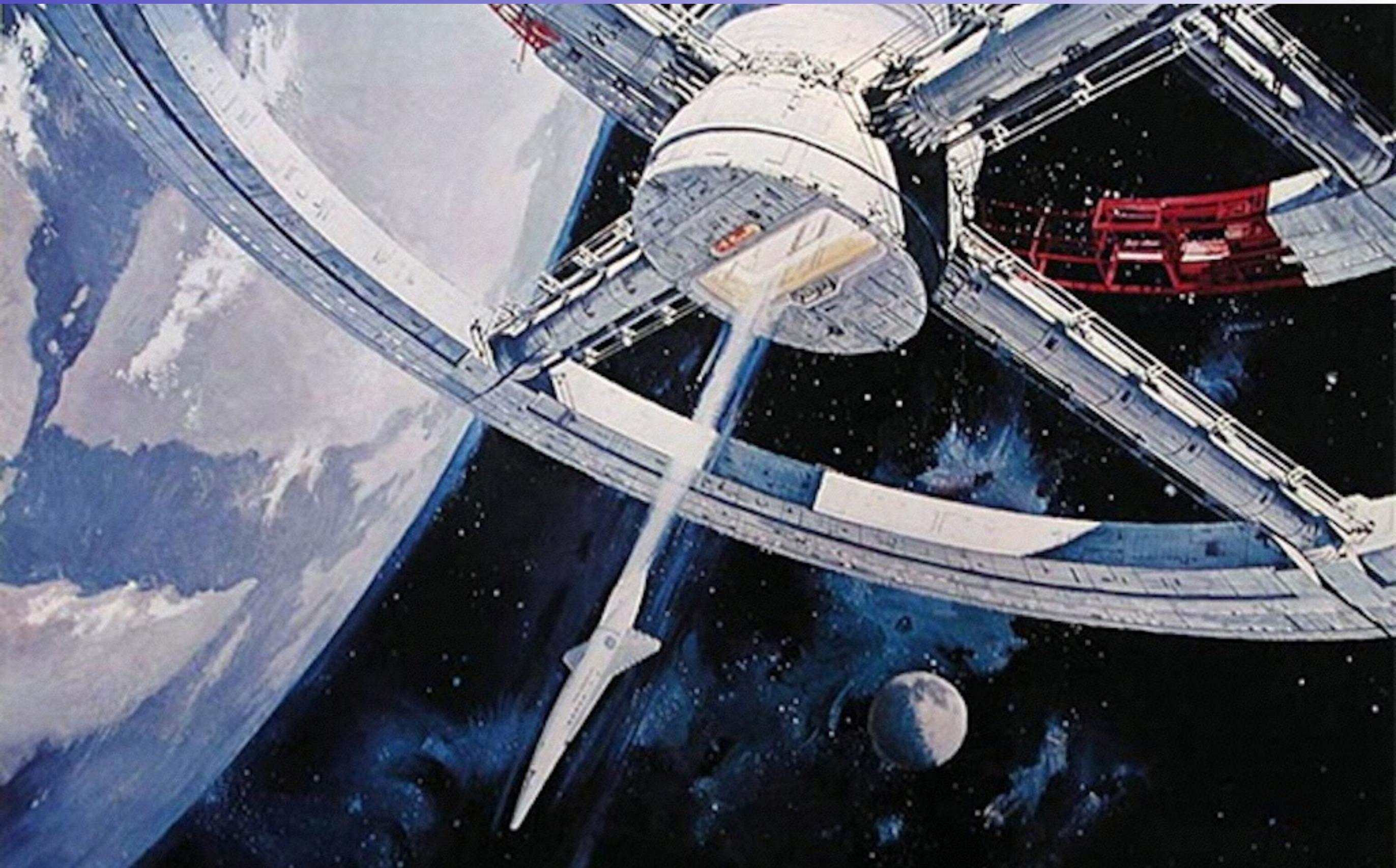
Government *did* contract to be the largest customer.

- Military contracts to expand performance envelope.
- Civilian contracts (air mail) to expand domestic reach.

A “National Airplane Program” in the 1930s would have been doomed to failure.



Space Travel Industry

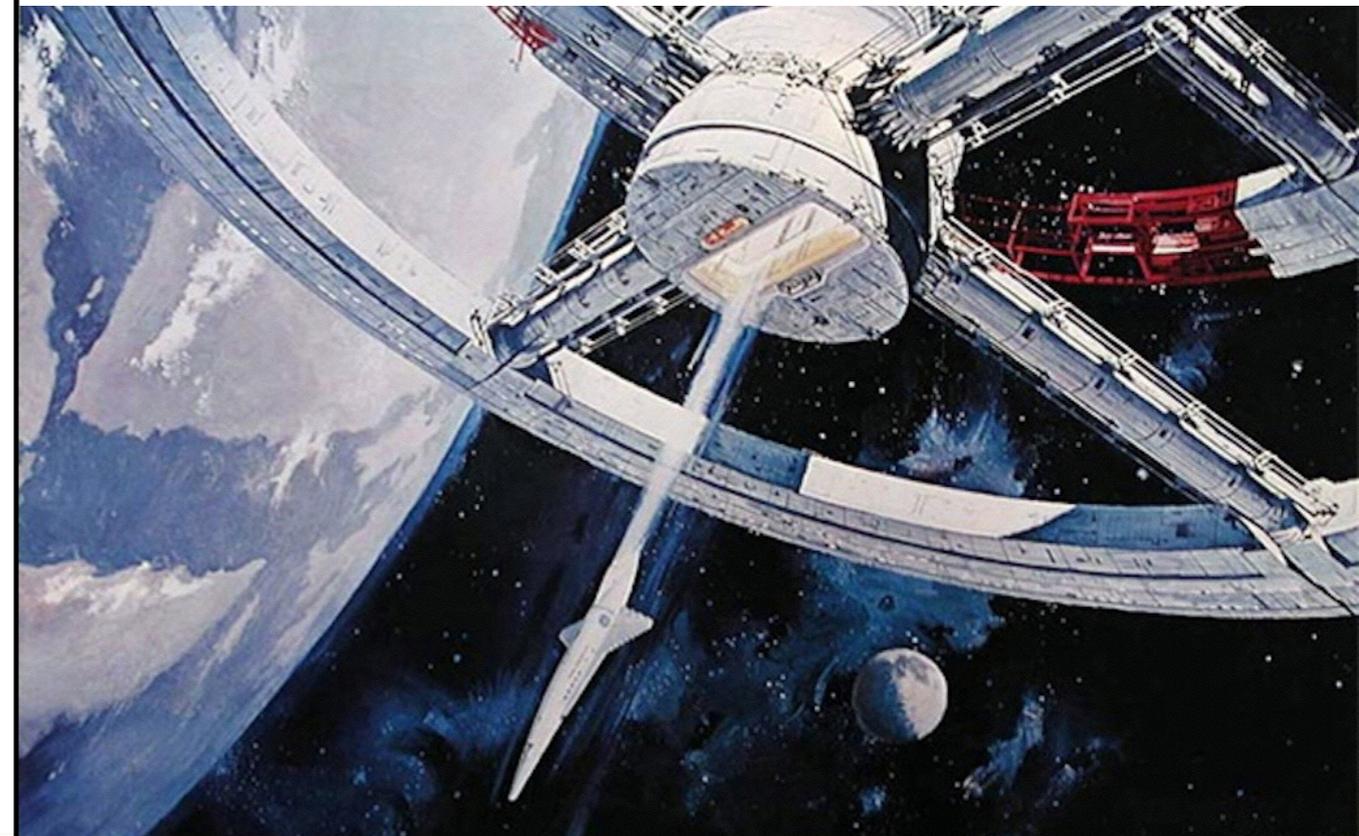


Until the 1960s, it was assumed that space would follow the same pattern.

- Government as customer, regulator, military presence.
- Pan Am would run spacelines, Hilton would build hotels.

It didn't quite work out that way...

So, why did we wind up with a National Space Program in the 1960s?



The four most dangerous words in the English language:

“It’s different this time.”

Where Did We Go Wrong?



“First, I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the earth. No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish.”

—*Pres. Kennedy, May 1961*

We treated space differently.



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—*Pres. Kennedy, May 1961*

The “space race” was never about space... it was about the race with the USSR.



We Went to the Moon...



...and we never went back.



The Legacy of Shuttle



Extraordinary expense.

–40X the original estimates!

Justified by Cold War rivalry and payloads.

“A camel is a horse designed by committee.”

Never came close to meeting economic goals.

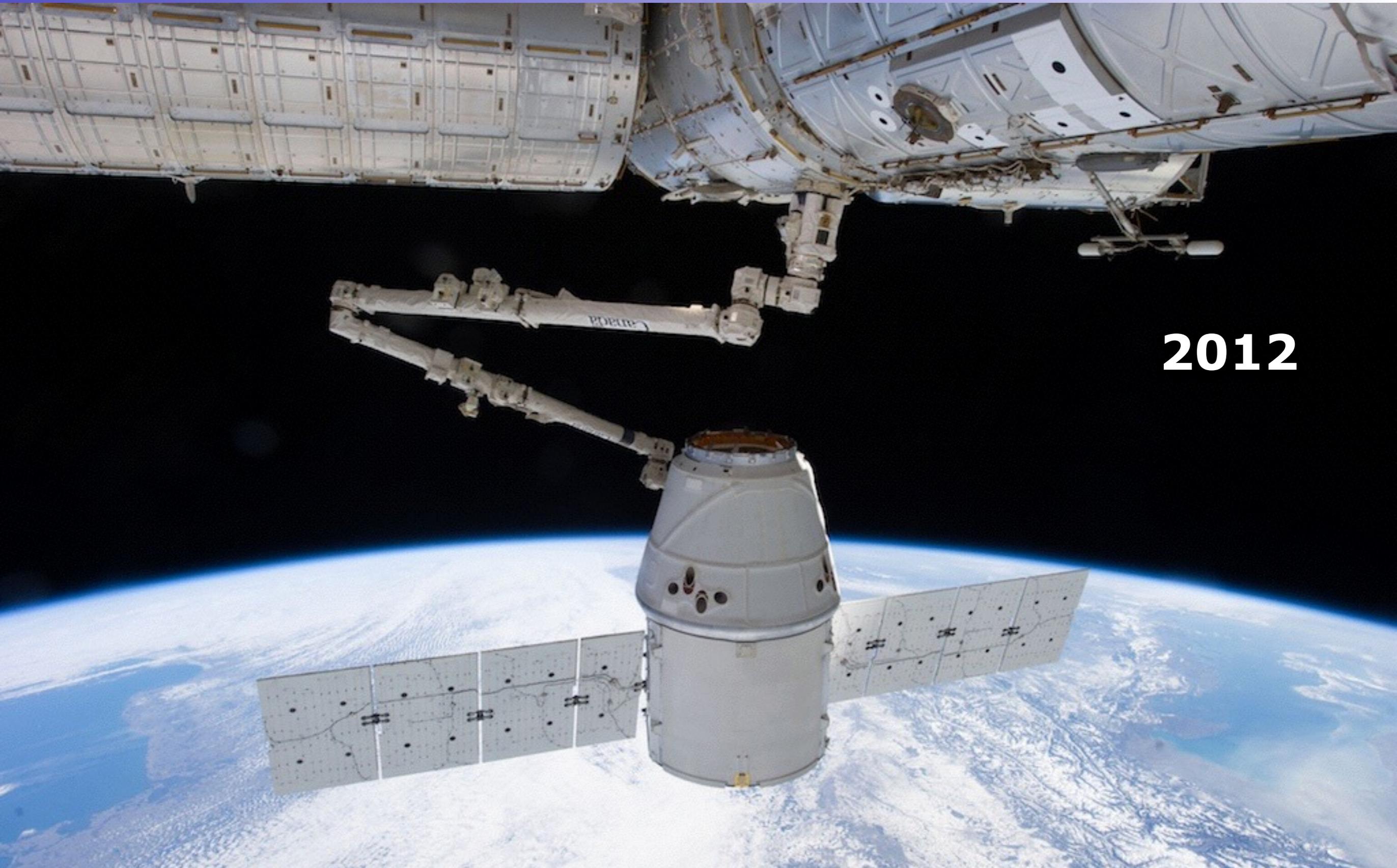
Had to be euthanized after two disastrous accidents.



40 Years in the Wilderness



SpaceX Dragon at ISS



2012

SpaceX Falcon Landing



2015



Blue Origin Re-flights



2016



9/23/16

Why Commercial Space?

Commercial Habitats

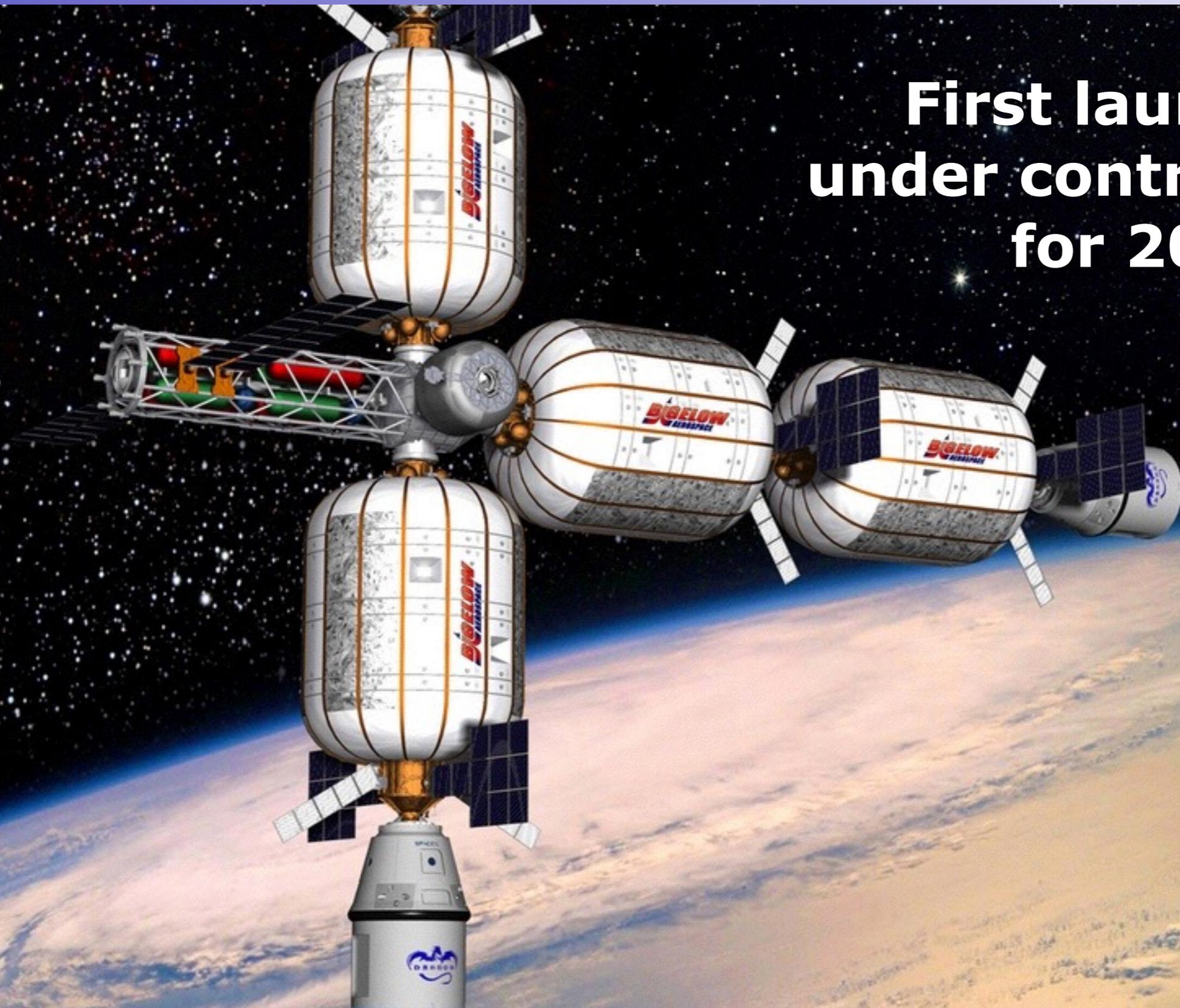


**2016: 1/2-scale
demonstrator
under test at ISS**

Commercial Habitats



**First launch
under contract
for 2020**

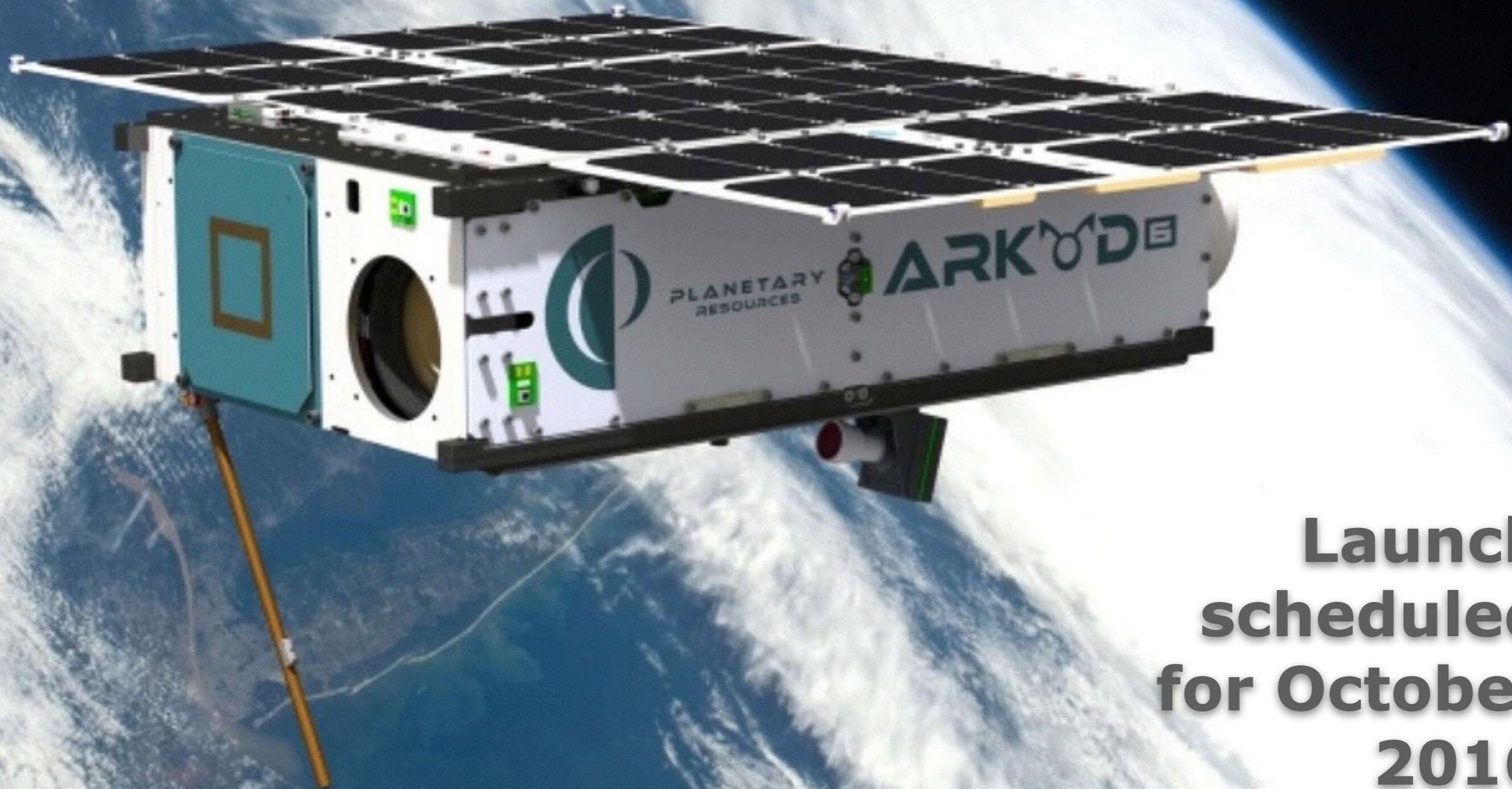


Moore's Law: Smallsats



Elementary school students launched a satellite in 2015!

Planetary Resources

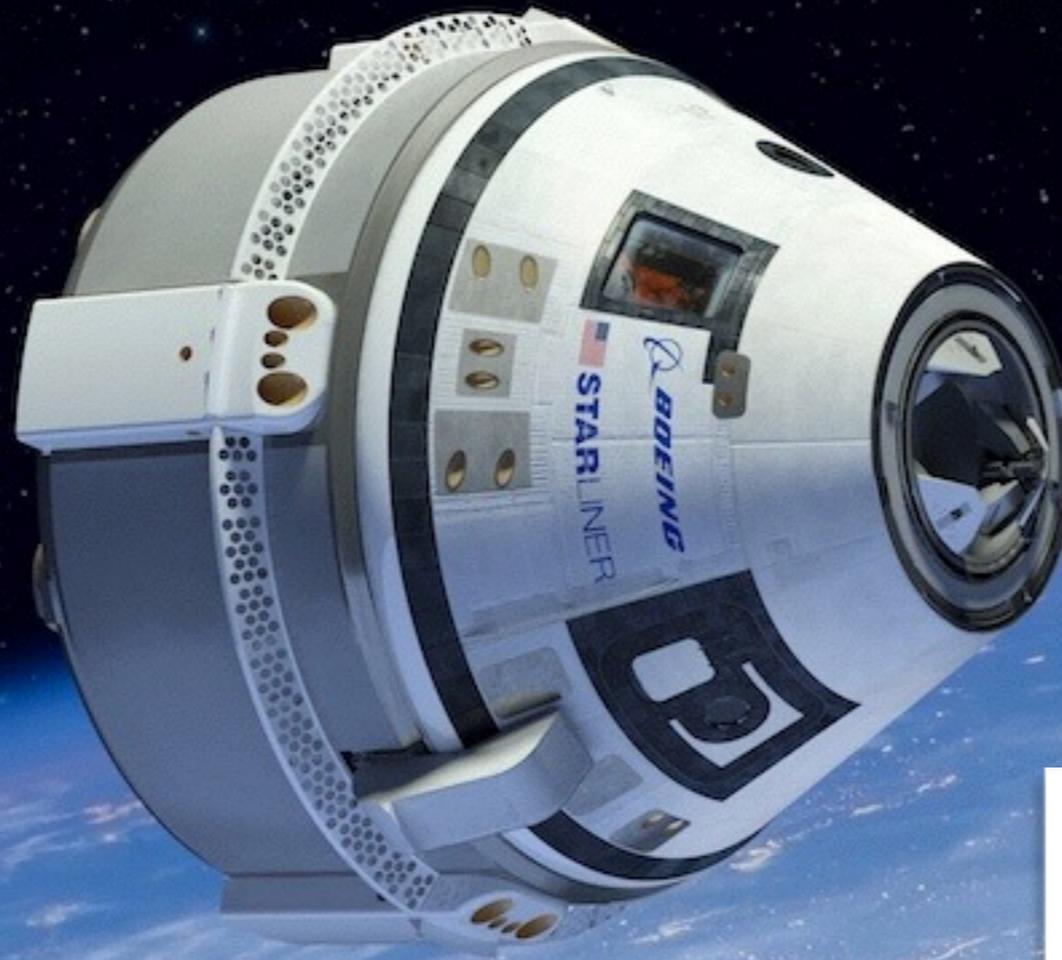


**Launch
scheduled
for October
2016**

Boeing Starliner



**First flight
planned
for 2017**



Moon Express



**Three launches
under contract
for 2017+**

 Federal Aviation
Administration

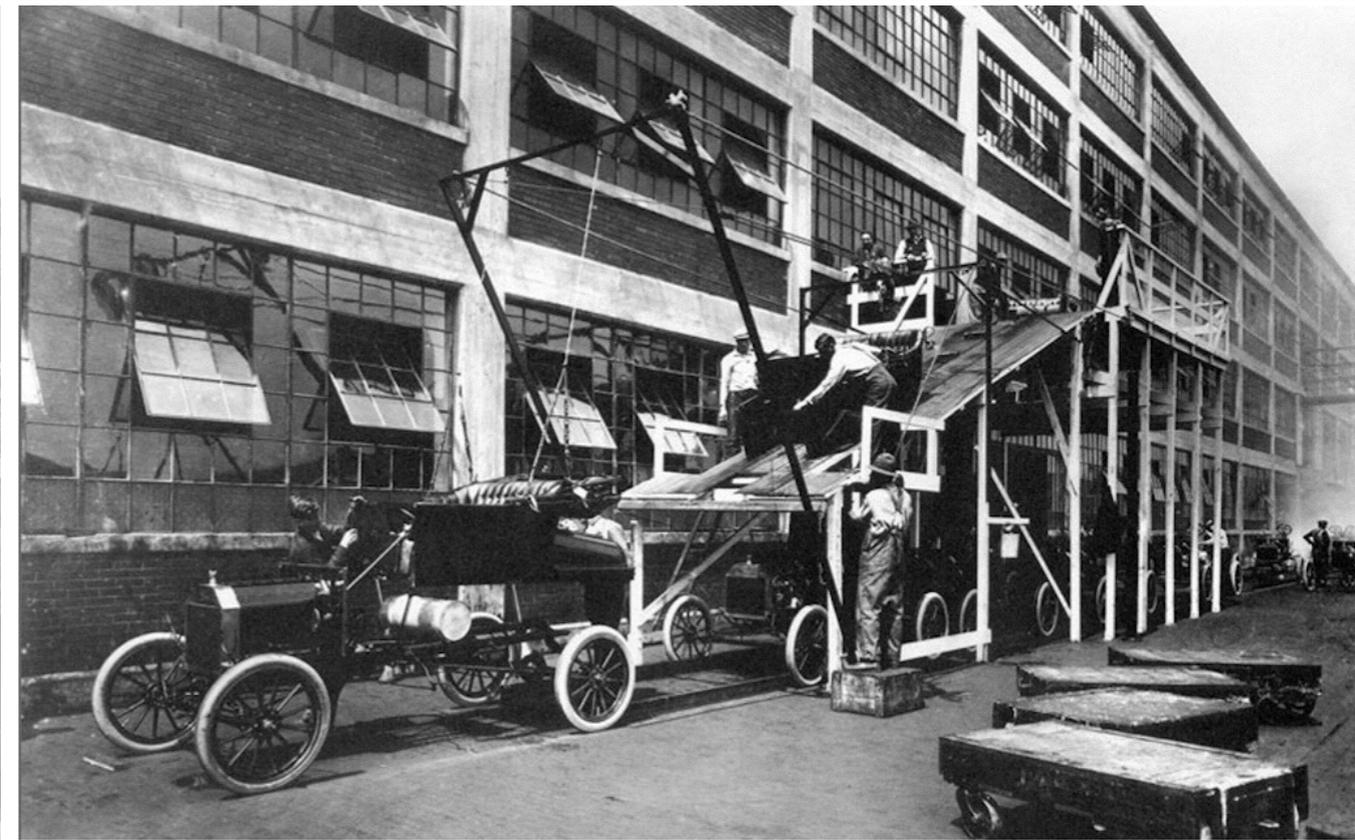
Fact Sheet – Moon Express Payload Review Determination

For Immediate Release

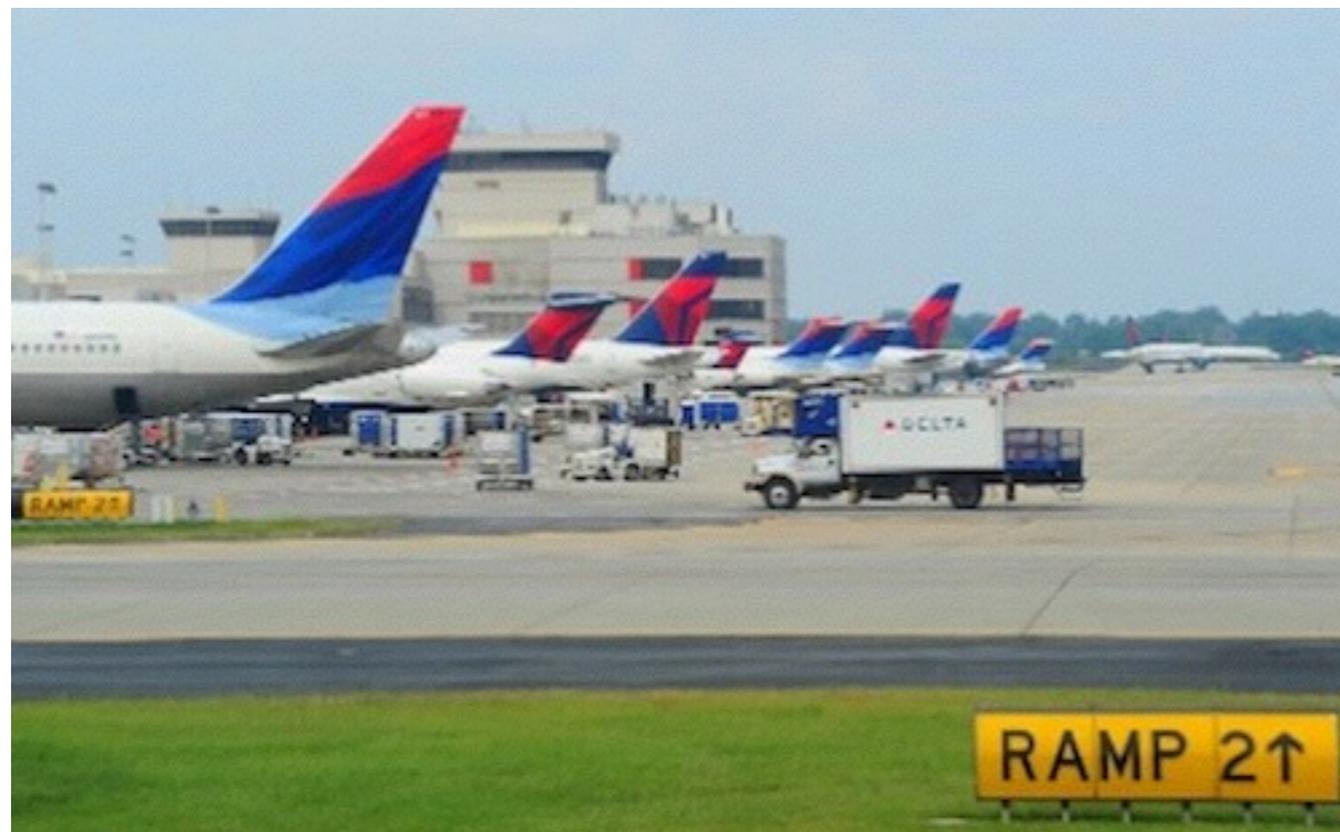
August 3, 2016
Contact: Laura Brown
Phone: 202-267-3883

On April 8, 2016, Moon Express, Inc. submitted a request to the Federal Aviation Administration (FAA) for a Payload Review and Determination on the MX-1E spacecraft. On April 21, 2016, the FAA accepted this application and proceeded with review.

Opportunities for Georgia



Opportunities for Georgia



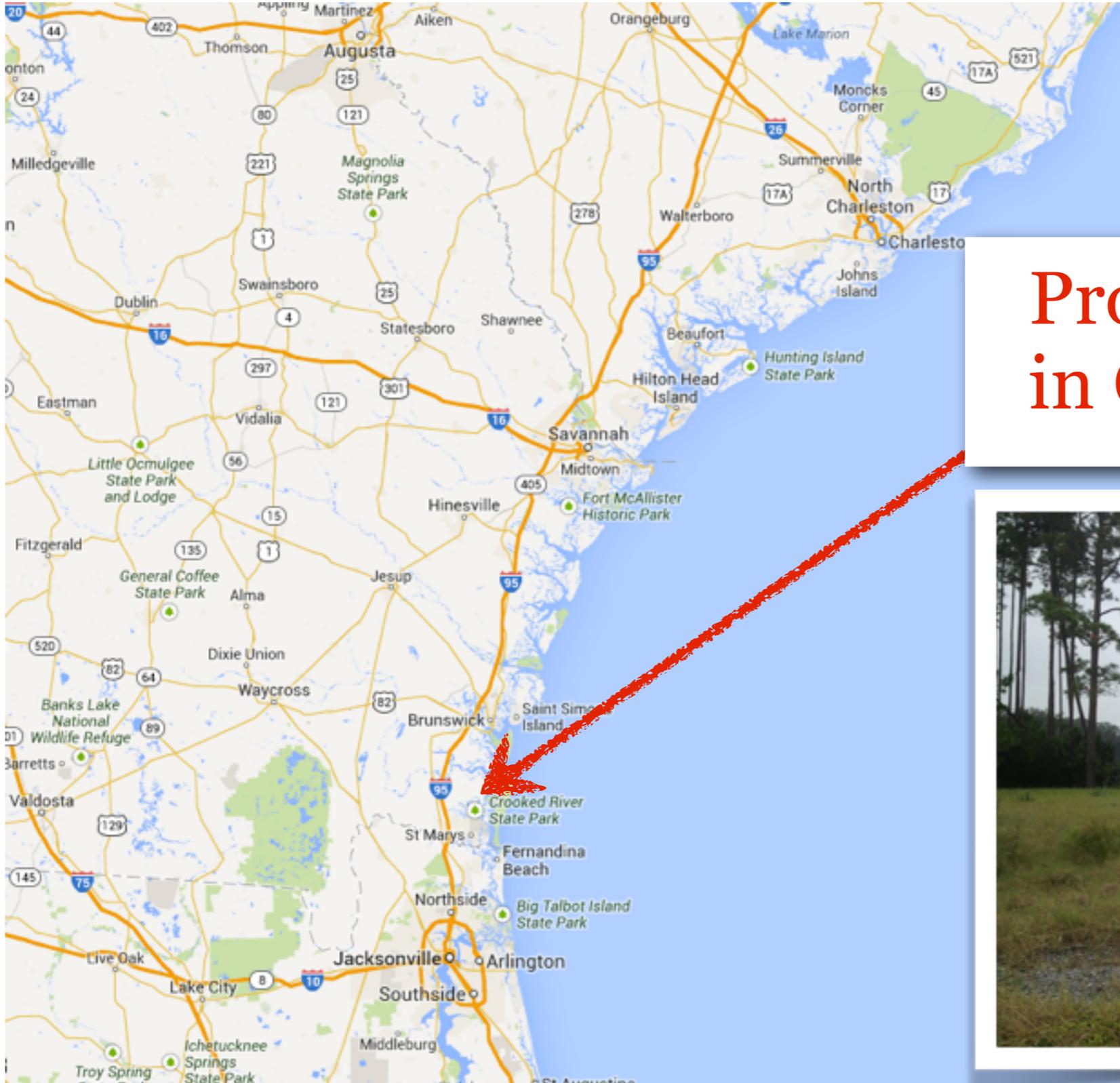
Opportunities for Georgia



9/23/16

Why Commercial Space?

Spaceport Camden



Proposed launch site
in Camden County.



The Sky is Not the Limit!





Boostphase

***Changing your business trajectory
from launch through initial acceleration***

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