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The Future of the Commercial Space Industry in Small Launches

Eric Stallmer
President, CSF
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WHO WE ARE & WHAT WE DO

- CSF is comprised of 70+ businesses, organizations, and universities
- CSF aims to promote the development of commercial spaceflight, pursue ever higher levels of safety, and share best practices and expertise throughout the industry
- Promote policies and programs that enable the industry to flourish
- 7 committees: Export Control, Government Funding, Industry Consensus Standards, Regulatory, Space Commerce, Small Sats, and Spaceports
- Engage and coordinate with agencies that oversee and acquire procurement services from the industry
- Coordinate and amplify communications with policymakers and the public on industry developments and CSF member achievements

A FEW OF OUR MEMBERS



Why Space launch, Innovation !!!



NATIONAL SPACE POLICY



Heading to Space



Virgin Galactic's LauncherOne



Vector Space's Vector-R

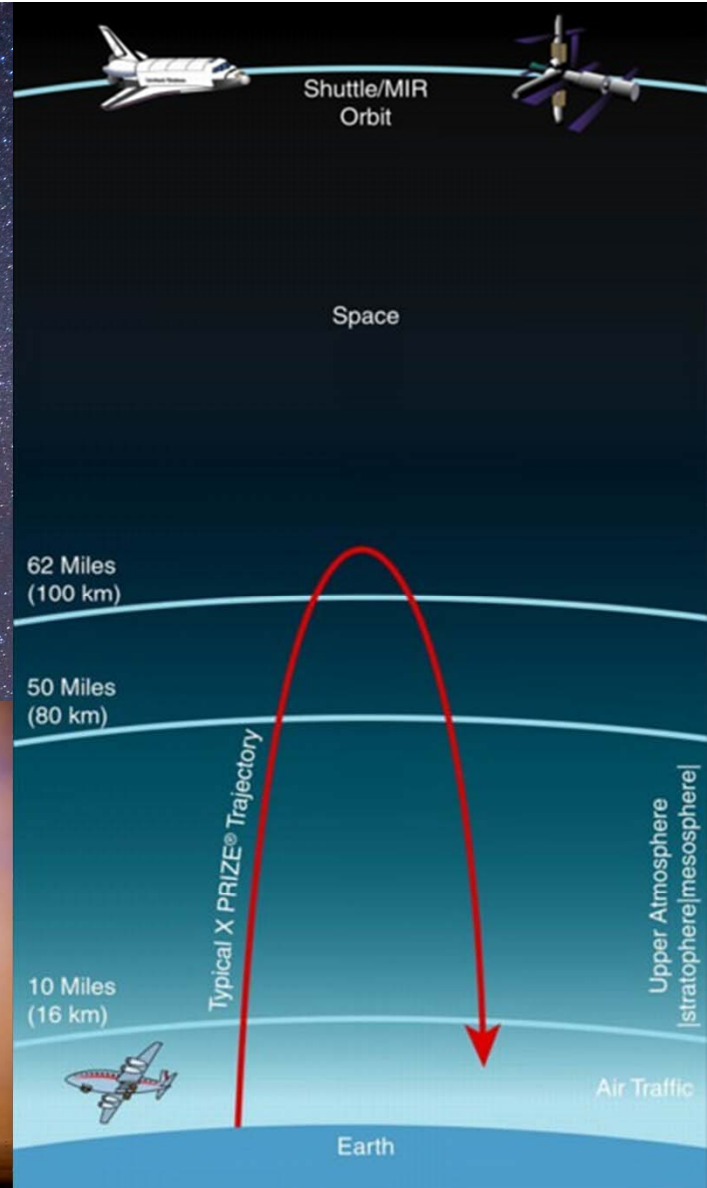


SpaceX's Falcon 9

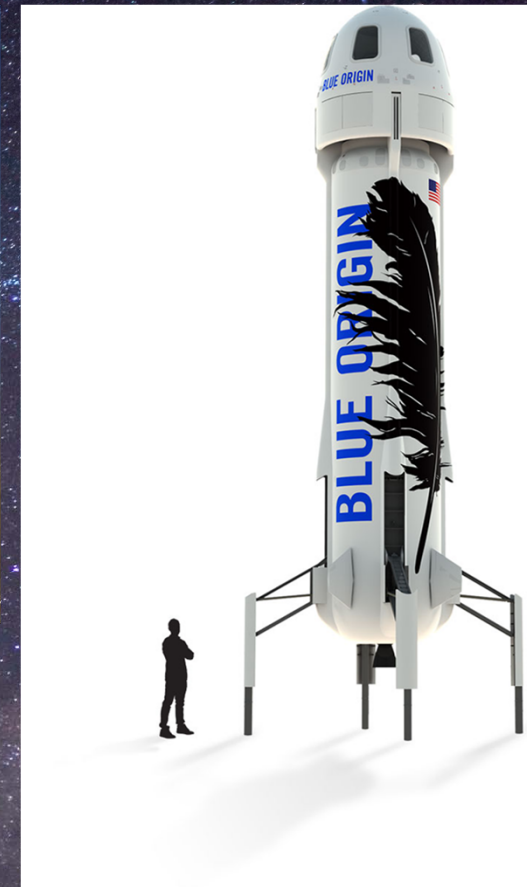
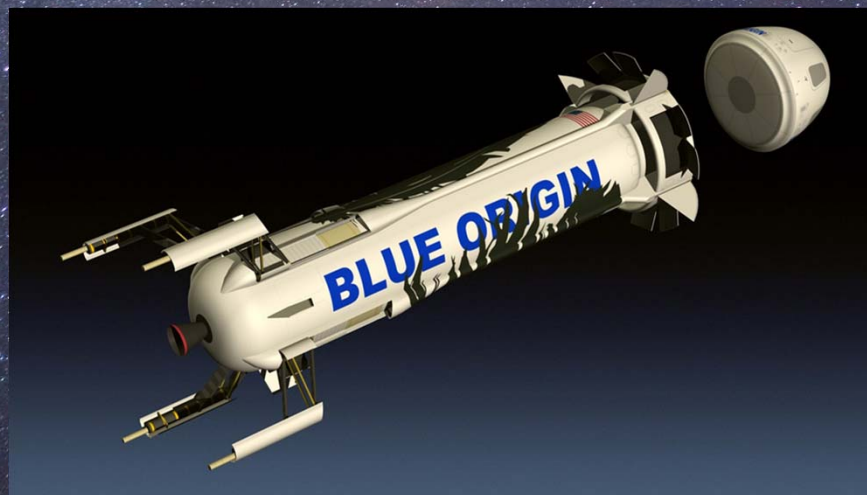


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Sub-Orbital Space



New Shepard



VIRGIN GALACTIC



SpaceX



Falcon 9

- At least 11 planned launches, in the first six months of 2018





WorldView



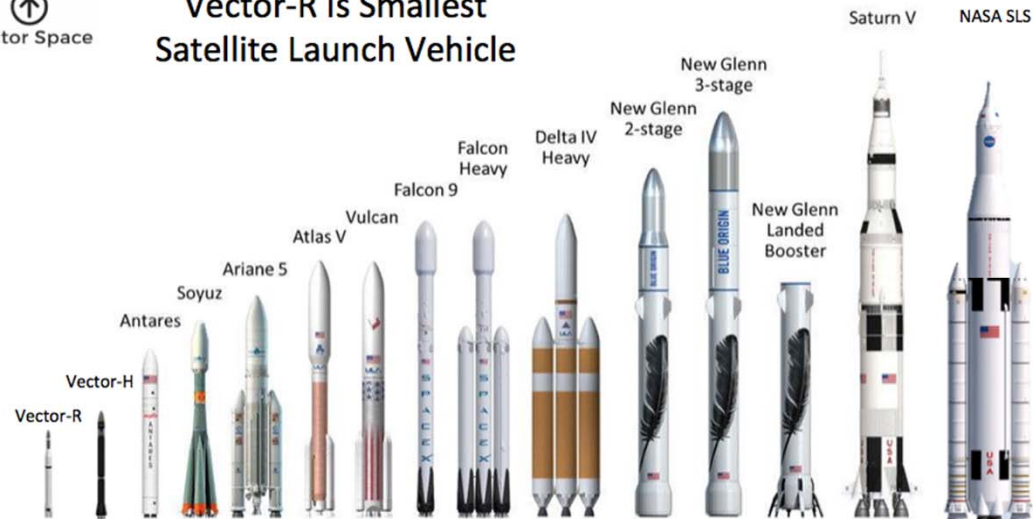
Vector & Rocket Lab



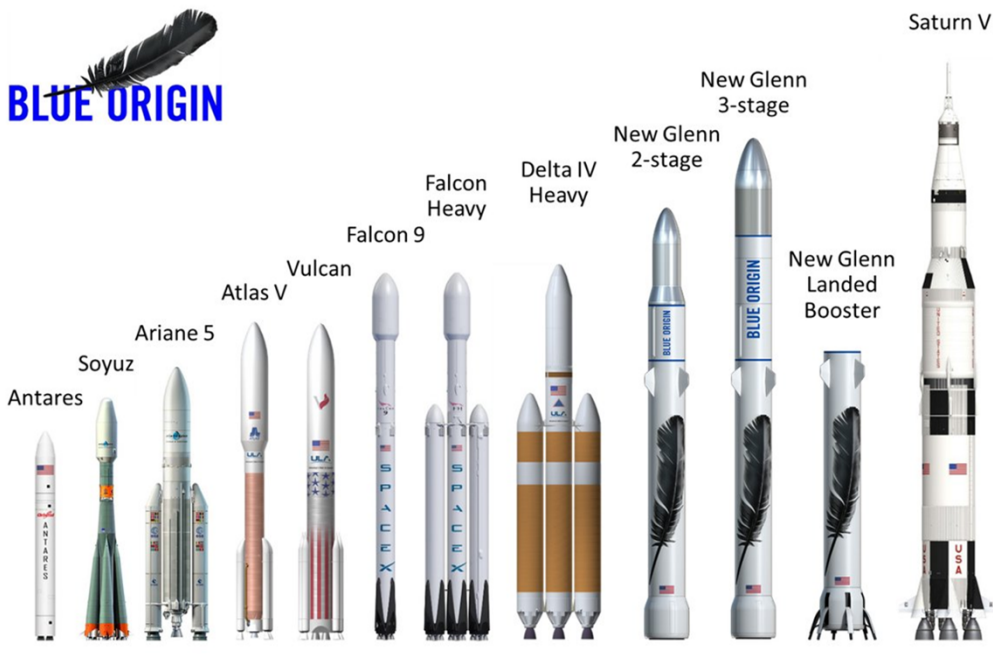
Vector-R & Vector-H



Vector-R Is Smallest Satellite Launch Vehicle



Blue Origin



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Virgin Orbit Stratolaunch



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LauncherOne



How a tiny county in Georgia is trying to create the country's newest commercial spaceport



Spaceport Camden

- Rockets could one day launch to orbit from Spaceport Camden
- Potentially the first exclusive non-federal range on the east coast.
- Small port, therefore many more small launches

SpaceX Wants to Launch 30 Rockets in 2018

Blue Origin subjected rocket engine to over 100 rounds of testing

Virgin Orbit plans 2018 first launch

Space station cargo flight next on SpaceX's launch schedule



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Virgin Orbit wins first Defense Department launch contract

NASA to Test Advanced Space Wireless Network and Device for Returning Small Spacecraft to Earth

Virgin creates VOX Space for its government-related launches



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Investment in Space

2018 will be a record year for investment in space start-ups.

- **Total space start-up funding over the past 16 years — including capital raising and debt — comes to about \$16.6bn globally.**
- **If debt financing of \$5bn is excluded, two-thirds of investment into space start-ups has been made in the past five years**
- **Average investment is also growing. Estimates are the average seed investment, rose from \$500,000 in 2015 to \$1.6m in 2016**

Over the past five years, venture capital investment into Space Companies has grown from \$239.9m in 2000-2005 to \$3.8bn in 2012-16.

13 venture capital firms have invested in three or more start up space companies.



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Thank You!

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And still more....



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