



Virginia Space

*Governor's
Transportation Conference
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Executive Director
Virginia Commercial Space Flight Authority*



VCSFA and MARS

- ***VCSFA was created in 1995, with the mission of promoting commercial space activity, economic development and aerospace research within Virginia***
- ***VCSFA owns and operates the Mid-Atlantic Regional Spaceport (MARS)***
- ***MARS is located on NASA Wallops Flight Facility (WFF)***
- ***VCSFA and NASA entered into a Reimbursable Space Act Agreement in 1997 to enable VCSFA to establish and operate a commercial spaceport at WFF***





Missions from MARS

2006 – TacSat-2 launched for DoD, Operationally Responsive Space (ORS) Office

2007 – NFIRE (Near Field Infra Red Experiment) launched for ORS Office, just six months after TacSat-2 (demonstrated responsive turnaround)

2009 – TacSat-3 launched for ORS Office

2011 – 1st Operationally Responsive Space satellite (ORS-1) launched for ORS Office

2013-2016 – Antares / Cygnus manifested to launch to the International Space Station for Virginia-based Orbital Sciences Corporation and NASA (Ten Launches)

2013 – ORS-3 manifested to launch for the ORS Office

2013 – LADEE (Lunar Atmosphere and Dust Environment Explorer) manifested to launch for NASA

2014 – ORS-4 anticipated to launch for the ORS Office

2015 – ORS-2 anticipated to launch for the ORS Office





Antares/ Cygnus Program

COTS – Commercial Orbital Transportation Services

CRS – Commercial Resupply Service

- *Orbital Sciences Chose VA over FL*
- *Replaces Retired NASA Space Shuttle*
- *~\$1.9B for 8 Cargo Flights*
- *\$125M+ in New Facilities at MARS/WFF*
- *\$45M+ in New Facilities at Orbital/Dulles*
- *At Least 125 New Jobs*
- *Many Spin-off Jobs & Services*
- *Uses Orbital's New Antares LV*
 - *135' x 14', 284 MT GLOW*
- *Liquid Fueled 1st Stage*
- *Ukrainian 1st Stage Tank*
- *Solid Fueled Upper Stages*
- *Bringing It All Together in 2012*
- *Cargo Flights in 2013-2016*
- *Ship ~20,000 kg of cargo to ISS, as well as dispose of waste*





MARS Pad 0A - Antares Manifest

- *Antares Rocket Test and Launch Milestones*
 - *Cold Flow Test: Dec 2012*
 - *Hot Fire Test: Dec 2012*
 - *Test Launch: Winter 2012-13*
 - *COTS Demo: Spring 2013*
- *International Space Station Cargo Re-supply*
 - *CRS-1 to CRS-8*
 - *2013 through 2016*





Antares on MARS Pad 0A Ramp





Antares Lift to Vertical on MARS Pad 0A





Antares / Cygnus ISS Resupply





MARS Pad 0B - LADEE Mission



- *Lunar Atmosphere and Dust Environment Explorer (LADEE)*
- *Launch to the Moon Summer 2013*
- *Objectives*
 - *Determine density, composition, and time variability of lunar atmosphere before perturbed by more human activity*
 - *Test laser communication capabilities*
 - *Demonstrate a low-cost lunar mission*
 - *Simple multi-mission modular bus*
 - *Low-cost launch vehicle, Minotaur V, launched from a Commercial Spaceport*





MARS Pad 0B – ORS Missions

- *Objective: Deliver Space capabilities responsively to DoD worldwide*
- *DoD ORS-3*
 - *Operationally Responsive Space Satellite/Mission #3*
 - *Launch Summer 2013*
 - *Minotaur I Launch Vehicle*
- *DoD ORS-4*
 - *Demonstrate Responsiveness by launching shortly after ORS-3*
 - *Minotaur I Launch Vehicle*
- *DoD ORS-2*
 - *Launch 2015*
 - *Anticipate use of the Taurus Launch Vehicle*





www.marsspaceport.com

