



For Immediate Release

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Frontier Aerospace Selected for NASA Award to Develop Deep Space Thruster Using MON-25/MMH Propellant

Frontier Aerospace and Astrobotic team to win Tipping Point selection from NASA's Space Technology and Mission Directorate (STMD) to develop MON-25/MMH thruster for Peregrine Moon landing

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Simi Valley, CA – Frontier Aerospace Corporation is pleased to announce their selection by NASA's Space Technology and Mission Directorate (STMD) for a "Tipping Point" award to provide flight qualification of Frontier's Deep Space Engine (DSE) that utilizes MON-25/MMH propellant. The DSE engine will enable the design of smaller and less expensive propulsion systems for spacecraft as a result of the lower temperature freezing characteristics of MON-25/MMH propellant.

Frontier teamed with Astrobotic of Pittsburgh, PA, to win the award, with Frontier to provide five DSE thrusters under the program for use in Astrobotic's Peregrine lunar lander planned for launch at the end of 2020. The DSE thrusters will be integrated into a propulsion system provided by Dynetics of Huntsville, AL, for trans-lunar injection, several Lunar Orbit Insertion (LOI) decelerations, a breaking maneuver, and finally a powered descent to the lunar surface. "We are very excited to be selected for this award and to be a part of Astrobotic's Peregrine lunar lander mission," said Jim McKinnon, President of Frontier Aerospace. "Astrobotic is proud to support Frontier in the development of the next generation of deep space engines. These engines are ideally suited to power our Peregrine Lunar Lander and we are excited to prove their performance capabilities using our spacecraft. We look forward to working closely with

Frontier on a successful first mission," said Sharad Bhaskaran, Mission Director at Astrobotic.

Frontier's use of MON-25/MMH propellant in their DSE thruster design was key for the award selection. The lower freezing point of MON-25/MMH propellant in comparison to typical propellants will enable propulsion systems with lower power requirements which translates to smaller and less expensive spacecraft systems. "The DSE thruster fills a significant need in the commercial marketplace. Potential uses include long-duration science missions to asteroids, Mars, Europa and other exomoons, and lunar landers, as well as short-duration missions for the Missile Defense Agency (MDA)," said McKinnon.

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About Frontier Aerospace Corporation:

[Frontier Aerospace Corporation](#) designs, develops, and tests innovative space and launch systems. Focusing primarily in the areas of booster rocket engine components, reaction control thrusters, attitude control propulsion systems and deep space exploration thrusters, we have the experience, resources, partnerships and industry contacts necessary to see complex projects through. Frontier has a proven philosophy for propulsion development that produces reliable, tested designs. Frontier is located in Simi Valley, California near Los Angeles.

About Astrobotic:

[Astrobotic Technology, Inc.](#) is a lunar logistics company that delivers payloads to the Moon for companies, governments, universities, non-profits, and individuals. The company's spacecraft accommodates multiple customer payloads on a single flight, offering flexibility at an industry-defining low price of \$1.2 million per kilogram. Astrobotic is an official partner with NASA through the [NASA Lunar CATALYST program](#), has 28 prior and ongoing NASA contracts, a commercial partnership with Airbus DS, a corporate sponsorship with DHL, 12 deals for its first mission to the Moon, and 130 customer payloads in the pipeline for upcoming missions. Astrobotic was founded in 2007 and is headquartered in Pittsburgh, PA.