

J-2X engine continues to set standards

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Credit: NASA/SSC

(Phys.org) -- Testing of the next-generation J-2X rocket engine continues to set standards. Last fall, the engine attained 100 percent power in just its fourth test and became the fastest U.S. rocket engine to achieve a full-flight duration test, hitting that 500-second mark in its eighth test. On, May 25, NASA recorded another first during a 40-second test of the engine on the A-2 Test Stand at John C. Stennis

Space Center. For the first time, test conductors fired the J-2X in both the secondary and primary modes of operation, 20 seconds in each. Previous tests were run in one mode only; combining the two allowed operators to collect critical data on engine performance.

The data will be used in continued development of the engine, which is being built to help carry humans deeper into space than ever before. The space agency conducted an initial round of sea-level tests on the engine last year, then removed it from the Stennis test stand to prepare both the stand and engine for the second round of testing at simulated altitudes up to 50,000 feet. Such testing is critical to characterize nozzle and system performance at elevated altitude and to demonstrate engine operation across its throttle range.

The J-2X engine is the first human-rated [liquid oxygen](#) and [liquid hydrogen](#) rocket engine to be developed in four decades. It will power the upper stage of NASA's Space [Launch System](#), an advanced heavy-lift rocket that will provide an entirely new national capability for human exploration beyond Earth's orbit. Pratt & Whitney Rocketdyne is developing the J-2X engine for NASA's Marshall Space Flight Center in Huntsville, Ala.

Provided by JPL/NASA

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