

# NASA performs first J-2X powerpack test of the year

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J-2X powerpack test lights up the night. Credit: NASA/SSC

(PhysOrg.com) -- Engineers at NASA's Stennis Space Center conducted an initial test of the J-2X engine powerpack Feb. 15, kicking off a series of key tests in development of the rocket engine that will carry humans deeper into space than ever before.

This [test](#) is the first of about a dozen various powerpack tests that will be conducted throughout the year at Stennis. The initial test was designed to ensure powerpack and facility control systems are functioning properly. It also marked the first step in establishing start sequencing for tests and was the first time cryogenic fuels were introduced into the powerpack to ensure the integrity of the facility and the test article in preparation for full power, longer duration testing.

The powerpack is a system of components on the top portion of the J-2X engine, including the gas generator, [oxygen](#) and fuel turbopumps, and related ducts and valves. On the full J-2X engine, the powerpack system feeds the thrust chamber system which produces engine thrust.

The J-2X is being developed by Pratt & Whitney Rocketdyne for NASA's Marshall Space Flight Center in Huntsville, Ala. It is the first human-rated liquid oxygen and liquid hydrogen [rocket engine](#) to be developed in 40 years. The J-2X will provide upper-stage power for NASA's Space Launch System, a new heavy-lift vehicle capable of missions beyond low-Earth orbit.

The new powerpack test series is the second for the J-2X [engine](#). Testing of an Apollo-era powerpack at Stennis in 2008 provided critical data for development of the new, more advanced turbomachinery.

Provided by JPL/NASA

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