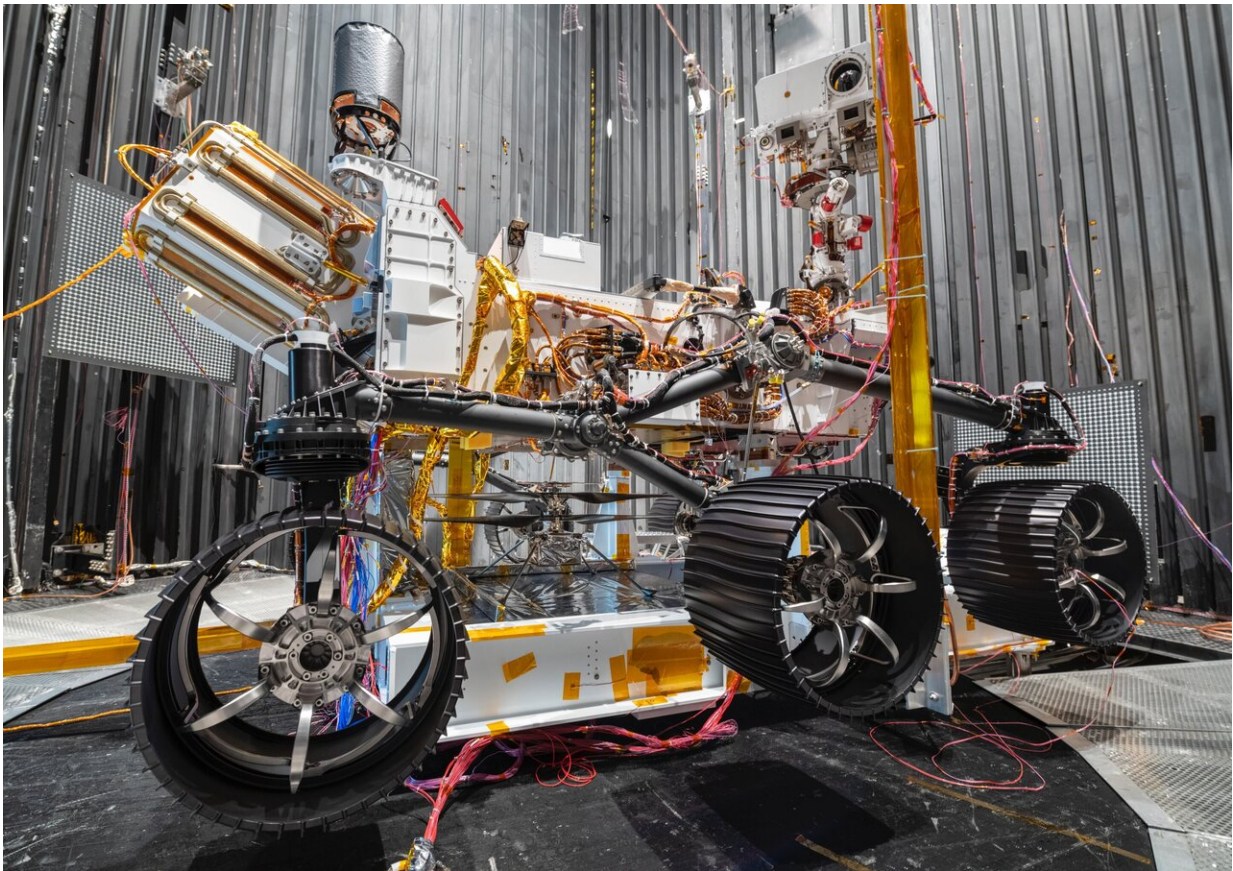


Ingenuity Mars helicopter recharges its batteries in flight

August 13 2020



The Ingenuity Mars Helicopter can be seen between the left and center wheels of the Mars 2020 Perseverance rover. The image was taken in the vacuum chamber at JPL on Oct. 1, 2019. Credit: NASA/JPL-Caltech

NASA's Ingenuity Mars Helicopter received a checkout and recharge of

its power system on Friday, Aug. 7, one week into its near seven-month journey to Mars with the Perseverance rover. This marks the first time the helicopter has been powered up and its batteries have been charged in the space environment.

During the eight-hour operation, the performance of the rotorcraft's six [lithium-ion batteries](#) was analyzed as the team brought their charge level up to 35%. The project has determined a low charge state is optimal for battery health during the cruise to Mars.

"This was a big milestone, as it was our first opportunity to turn on Ingenuity and give its electronics a '[test drive](#)' since we launched on July 30," said Tim Canham, the operations lead for Mars Helicopter at NASA's Jet Propulsion Laboratory in Southern California. "Since everything went by the book, we'll perform the same activity about every two weeks to maintain an acceptable state of charge."

The 4-pound (2-kilogram) helicopter—a combination of specially designed components and off-the-shelf parts—is currently stowed on Perseverance's belly and receives its charge from the rover's [power supply](#). Once Ingenuity is deployed on Mars' surface after Perseverance touches down, its batteries will be charged solely by the helicopter's own solar panel. If Ingenuity survives the cold Martian nights during its preflight checkout, the team will proceed with testing.



In this artist's concept, NASA's Ingenuity Mars Helicopter stands on the Red Planet's surface as NASA's Mars 2020 Perseverance rover (partially visible on the left) rolls away. Credit: NASA/JPL-Caltech

"This charge activity shows we have survived launch and that so far we can handle the harsh environment of interplanetary space," said MiMi Aung, the Ingenuity Mars Helicopter project manager at JPL. "We have a lot more firsts to go before we can attempt the first experimental flight test on another planet, but right now we are all feeling very good about the future."

The small craft will have a 30-Martian-day (31-Earth-day) experimental flight-test window. If it succeeds, Ingenuity will prove that powered, controlled flight by an aircraft can be achieved at Mars, enabling future Mars missions to potentially add an aerial dimension to their

explorations with second-generation rotorcraft.

More information: mars.nasa.gov/technology/helicopter/

Citation: Ingenuity Mars helicopter recharges its batteries in flight (2020, August 13) retrieved 26 April 2024 from <https://phys.org/news/2020-08-ingenuity-mars-helicopter-recharges-batteries.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.