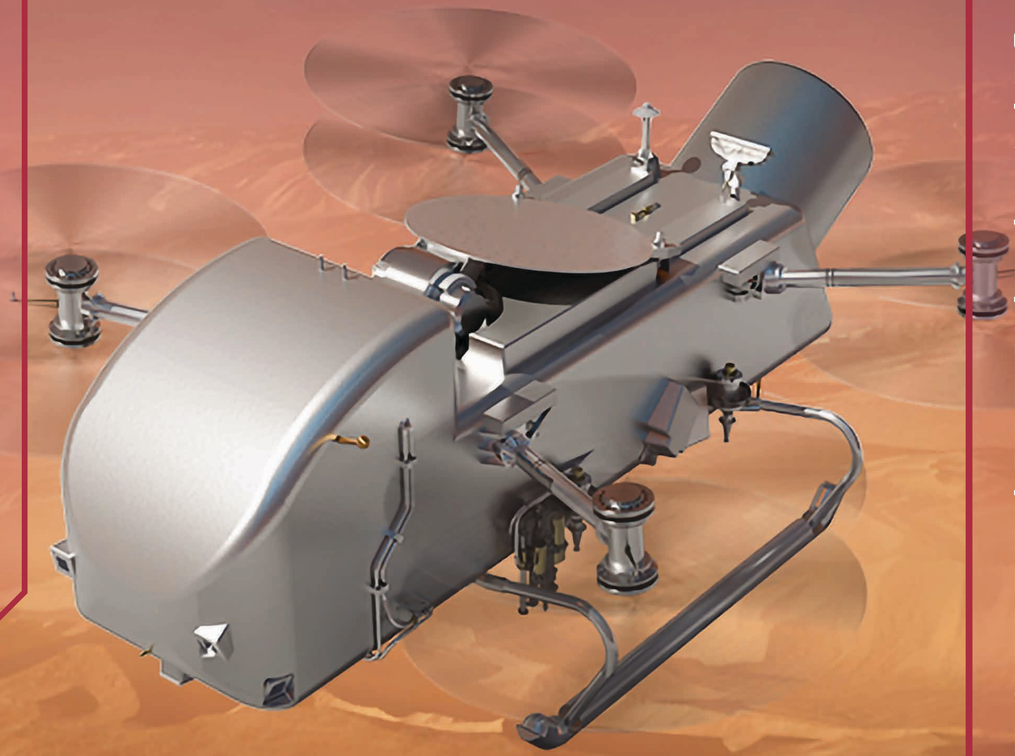
DRAGONFLY

"Dragonfly is a rotorcraft lander mission – part of NASA's New Frontiers Program – designed to take advantage of Titan's environment to sample materials and determine surface composition in different geologic settings. This revolutionary mission concept includes the capability to explore diverse locations to characterize the habitability of Titan's environment, to investigate how far prebiotic chemistry has progressed, and even to search for chemical signatures that could indicate water-based and/or hydrocarbon-based life."

- Johns Hopkins APL



This rotor was created for development of the Dragonfly team's rotor fabrication approach. These rotors are used for both wind tunnel testing at the NASA Langley Research Center's Transonic Dynamics Tunnel as well as on the Dragonfly lander itself. The rotor design continues to evolve with the needs of the project and mission, and this particular design iteration was tested in the TDT in Fall, 2022. This design iteration has both blades milled out to reduce rotor mass and rotary inertia, which is advantageous for an RPM-controlled vehicle. Only one side of this fabrication development prototype was milled out, and is left open for you to view. The final rotors have a 'cover plate' that closes the aerodynamic outer mold line after the inside is machined. The cover-plate is attached using an Electron-beam welding process.

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