

# Ingenuity Mars Helicopter Smashes Records on Its Ninth Flight

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Photo credit: NASA/JPL-Caltech/ASU



**I**n early July, the Ingenuity Mars helicopter completed its ninth and most challenging flight across the planet's surface. In so doing, it set new NASA records for distance, time aloft, and groundspeed. The rotorcraft, according to the Jet Propulsion Laboratory (JPL), traveled for 166.4 seconds (nearly 3 minutes) at a speed of 5 meters per second (11mph).

This “max effort,” NASA explained, challenged more than the machine’s physical strength. It also tested an onboard navigation algorithm, which helps

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Ingenuity determine where it is along the flight path, as well as the helicopter's telecom system, designed for line-of-sight communications over distances of a few hundred meters.

"All of this amounts to a significantly elevated risk, and it is safe to say that it will be the most nerve-wracking flight since Flight 1," JPL's chief pilot Håvard Grip and chief engineer Bob Balaram wrote in a pre-flight blog post. But Ingenuity made the harrowing trip without a hitch, collecting closeup images of the nearby Séítah terrain for scientists to study.

Since its deployment in early April, Ingenuity has been smashing flight goals left and right. It has flown at altitudes up to 33 feet and ground speeds up to 13 feet a second, covered a distance of 873 feet on flight four, and stayed in the air for 139.9 seconds on flight six. It even survived an in-flight anomaly while still landing within about 16 feet of its intended target.

"In doing all of those things, Ingenuity has already exceeded our expectations," NASA's blog said. Flight 9, however, upped the ante in terms of speed, landscape, and distance from the Perseverance rover.