

# SpaceX launches Canadian satellite from California (Update 2)

September 29 2013

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A SpaceX rocket carrying a Canadian satellite intended to track space weather launched from the California coast Sunday in what was billed as a test flight.

The Falcon 9 rocket lifted off from Vandenberg Air Force Base, about 150 miles (240 kilometers) northwest of Los Angeles, shortly after 9 a.m. under clear skies, eventually reaching its intended orbit.

SpaceX launched an older model of Falcon 9 five times from Florida. This was the first time the Southern California-based private rocket maker flew the next-generation version that boasts upgraded engines designed to improve performance and deliver heavier payloads.

The rocket carried a satellite dubbed Cassiope, a project of the Canadian Space Agency and other partners.

Once in orbit, scientists led by the University of Calgary hope to start powering up instruments after a checkout period, but the actual mission to track space weather won't begin until next month. Cassiope carries instruments to study space storms in the upper atmosphere and their potential effects on GPS navigation and radio communications.



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SpaceX considered Sunday's launch a demonstration flight to test the capabilities of the improved rocket. It was the third launch from the Vandenberg base this week. Earlier, the Air Force launched back-to-back unarmed Minuteman 3 intercontinental ballistic missiles that

traveled 4,200 miles (6,760 kilometers) over the Pacific Ocean.

Besides launching small satellites, SpaceX—or Space Exploration Technologies Corp. —has a \$1.6 billion contract with NASA to make a dozen unmanned missions to restock the International Space Station. SpaceX has completed three flights so far to the orbiting laboratory.

With NASA's space shuttle fleet retired, SpaceX is also working to modify its capsules to transport astronauts in several years. Until then, NASA astronauts are hitching rides on Russian rockets to zip to and from the space station.

A SpaceX competitor, Virginia-based Orbital Sciences Corp., launched its first-ever cargo ship bound for the space station earlier this month. The arrival of Orbital's Cygnus capsule, bearing chocolate and clothing, had been delayed because of a software problem, but it docked with the space station Sunday.

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