

# SpaceX launches hefty rocket with 24 satellites, experiments

June 25 2019, by Marcia Dunn

---



A SpaceX Falcon heavy rocket lifts off from pad 39A at the Kennedy Space Center in Cape Canaveral, Fla., early Tuesday, June 25, 2019. The Falcon rocket has a payload military and scientific research satellites. (AP Photo/John Raoux)

SpaceX launched its heftiest rocket with 24 research satellites Tuesday, a middle-of-the-night rideshare featuring a deep space atomic clock, solar

sail, a clean and green rocket fuel testbed, and even human ashes.

It was the third flight of a Falcon Heavy rocket, but the first ordered by the military.

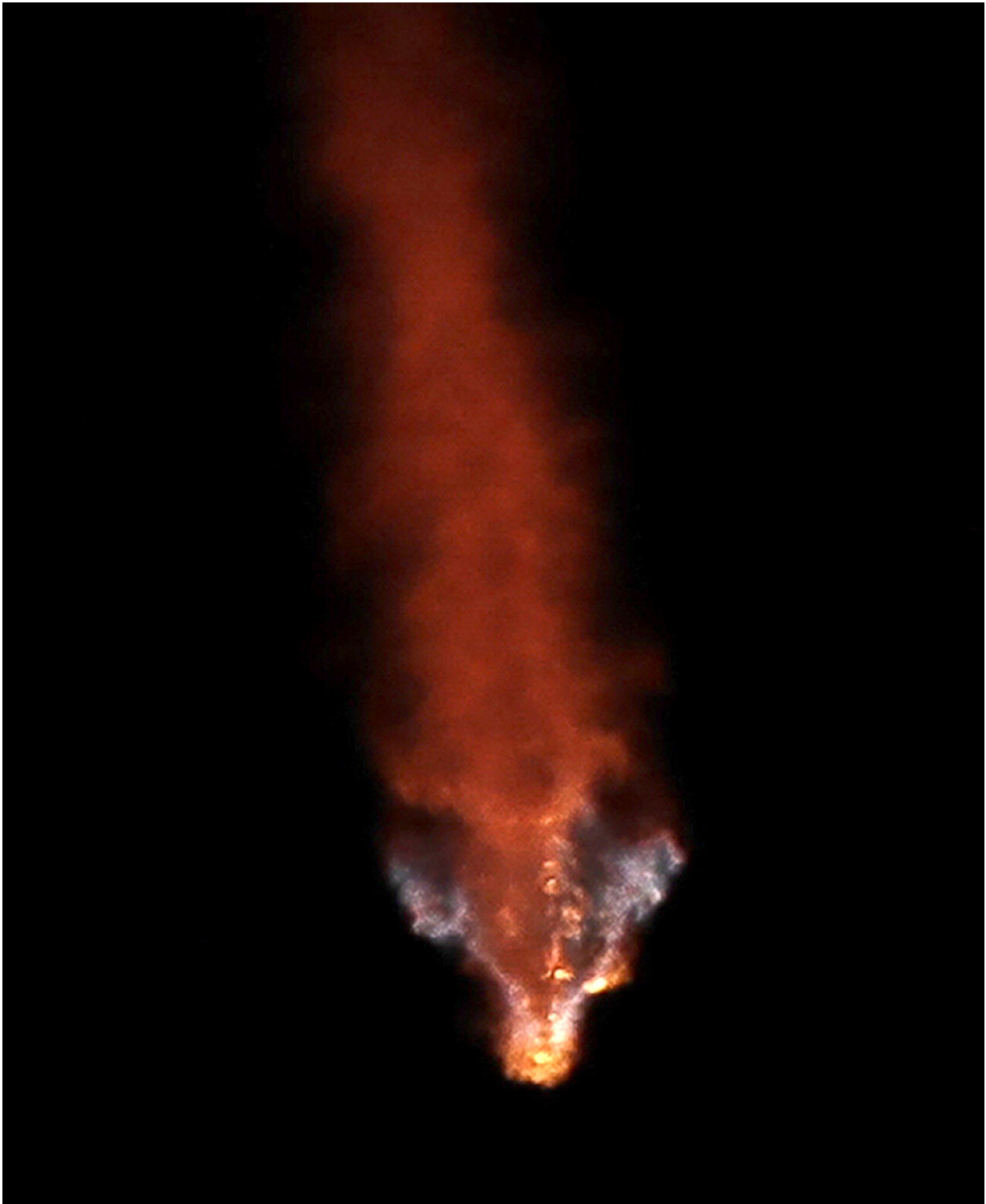
The Defense Department mission is expected to provide data to certify the Falcon Heavy—and reused boosters—for future national security launches. It marked the military's first ride on a recycled rocket.

Both side boosters landed back at Cape Canaveral several minutes after liftoff, just as they did after launching in April. But the new core booster missed an ocean platform, not unexpected for this especially difficult mission, SpaceX noted.

"It was a long shot," tweeted SpaceX founder and chief executive Elon Musk.

SpaceX did manage for the first time to catch the fairing, or nose cone, in a giant net on an offshore boat. The California-based company is trying to recover and reuse as many rocket parts as possible—rather than letting the pieces sink in the ocean—to drive down launch costs.

NASA signed up for a spot on this Falcon Heavy, along with the National Oceanic and Atmospheric Administration, the Air Force Research Laboratory, the Planetary Society and Celestis Inc., which offers memorial flights into space.



A SpaceX Falcon heavy rocket lifts off from pad 39A at the Kennedy Space Center in Cape Canaveral, Fla., early Tuesday, June 25, 2019. The Falcon rocket has a payload military and scientific research satellites. (AP Photo/John Raoux)

An astronaut who flew on NASA's first space station back in the 1970s, Skylab's Bill Pogue, had a bit of his ashes on board, along with more than 150 other deceased people. Pogue died in 2014.

Musk said it was "our toughest rocket launch ever." The satellites needed to be placed in three different orbits, requiring multiple upper-stage engine firings. It took several hours to release them all.

The Deep Space Atomic Clock by NASA's Jet Propulsion Laboratory is a technology demo aimed at self-flying spacecraft. Barely the size of a toaster oven, the clock is meant to help spacecraft navigate by themselves when far from Earth. NASA also was testing a clean and green alternative to toxic rocket and satellite fuel.

The Planetary Society's LightSail crowd-funded spacecraft will attempt to become the first orbiting spacecraft to be propelled solely by sunlight. It will be released next week from its temporary perch on a spacecraft and opened a week later.



A SpaceX Falcon heavy rocket lifts off from pad 39A at the Kennedy Space Center in Cape Canaveral, Fla., early Tuesday, June 25, 2019. The Falcon rocket has a payload military and scientific research satellites. (AP Photo/John Raoux)





A SpaceX Falcon heavy rocket lifts off from pad 39A at the Kennedy Space Center in Cape Canaveral, Fla., early Tuesday, June 25, 2019. The Falcon rocket has a payload military and scientific research satellites. (AP Photo/John Raoux)







A SpaceX Falcon heavy rocket lifts off from pad 39A at the Kennedy Space Center in Cape Canaveral, Fla., early Tuesday, June 25, 2019. The Falcon rocket has a payload military and scientific research satellites. (AP Photo/John Raoux)



The SpaceX Falcon heavy rocket boosters return to land after a successful launch from the Kennedy Space Center in Cape Canaveral, Fla., early Tuesday, June 25, 2019. The Falcon rocket has a payload military and scientific research satellites. (AP Photo/John Raoux)

"Our #LightSail2 is up and on its way," tweeted Bill Nye, the society's chief executive officer.

It's the society's third crack at solar sailing: The first was lost in a Russian rocket failure in 2005, while the second had a successful test flight in 2015.

The Air Force Research Laboratory had space weather experiments aboard, while NOAA had six small atmospheric experimental satellites for weather forecasting.

The Falcon Heavy is the most powerful rocket in use today. Each first-stage booster has nine engines, for a total of 27 firing simultaneously at liftoff from NASA's Kennedy Space Center.

The first Falcon Heavy launch was in February 2018. That test flight put Musk's red Tesla convertible into an orbit stretching past Mars.

© 2019 The Associated Press. All rights reserved.

Citation: SpaceX launches hefty rocket with 24 satellites, experiments (2019, June 25) retrieved 21 May 2024 from <https://phys.org/news/2019-06-spacex-hefty-rocket-satellites.html>

<p>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.</p>
--