SpaceX sends up Falcon Heavy on sunset launch for Space Force

January 16 2023, by Richard Tribou

Credit: SpaceX, CC0, via Wikimedia Commons

The winds died down for SpaceX as it queued up its rarely used Falcon Heavy right after sunset from the Space Coast on Sunday.

The fifth flight of the powerhouse rocket lifted off at 5:56 p.m. Eastern time from Kennedy Space Center's Launch Pad 39-A on a mission for the Space Force dubbed USSF-67. With winds over 20 mph gusting on Saturday across the region, the launch was pushed by a day.

But Sunday's skies were clear and calm so at liftoff, the rocket's plume lit up in glorious orange billows while creating a distant dark shadow slanting across the horizon.

The cheers of employees and their families on site were soon drowned out by the rumble of the 5.1 million pounds of thrust that tumbled across the space center, eventually dying away but not without setting off a few car alarms.

Falcon Heavy, which only falls second to NASA's Space Launch System in terms of most powerful active rockets, is essentially three Falcon 9s strapped together outfitted with 27 Merlin engines across the three first stages.

SpaceX was able to recover both side stages, which gave off their own light show with sparking thruster burns on their return trip, finally touching down at nearby Cape Canaveral Space Force Station's Landing Zones 1 and 2, providing a double sonic boom up and down the Space Coast as they broke the sound barrier.

The center core will not be recovered as more fuel is needed to get its payloads to the higher altitude engine.

The launch is the third from the Space Coast in 2023 in a year that could send up between 86 and 92 from among all rocket companies, according to Space Launch Delta 45 commander Maj. Gen. Stephen Purdy. So far, all launches have been by SpaceX.

This is the second National Security Space Launch for Falcon Heavy having sent up USSF-44 in November. The rocket had the capacity to send 141,000 pounds of payload to low-Earth orbit and nearly 60,000 pounds to the geosynchronous Earth orbit, which was the target of Sunday's launch.

"It greatly enhances out heavy lift capability," said Frank DiBello, president and CEO of Space Florida, the state's aerospace economic development agency. "The measure of a spaceport really is not so much the number of launches but the total amount of payload that you can deliver to a useful destination to either achieve mission purpose or to create value."

This payload for this flight included the second of the Space Force's second Continuous Broadcast Augmenting SATCOM communications satellite, the first of which launched in 2018 on a United Launch Alliance Atlas V. The satellites send military data through space-based relay links, according to the Space Force.

Also on board was the Long Duration Propulsive ESPA 3A, which is a ride-share spacecraft that can host or deploy up to six payloads, what Space Force officials call a "freight train to space."

The Space Force said this mission will use five of the six slots including two for Space Systems Command called "catcher" and "WASSAT," the details of which were not provided. Also flying are three payloads developed by the Space Rapid Capabilities Office: two operational prototypes for "enhanced situational awareness" and another operational "crypto/interface encryption" payload for secure space-to-ground communications.

"This is a complex mission and truly represents what Assured Access to Space (a group that includes SLD 45 within Space Systems Command) is

about and is why we're so enthusiastic about this upcoming launch … our second Falcon Heavy in just months," Purdy said ahead of liftoff. "The teamwork I've seen preparing for this launch has just been exceptional. We've worked side-by-side with SpaceX to ensure all boxes are checked … that all systems are go. And our processes for getting to that 'go' decision at (Launch Readiness Review) are thorough and constantly evolve, so they're also more efficient than ever."

SpaceX has four more Falcon Heavy missions on the books for 2023 including a third Space Force mission dubbed USSF-52 expected in the first half of 2023.

"I know the national security community is thrilled with the fact that the Falcon Heavy is not only proving itself capable, but it's proving itself reliable," DiBello said. "I think you'll see an increasing dependence on the Falcon Heavy for launch capability for select payloads."

Also coming up for the rocket is the launch of commercial company ViaSat 3 Americas' communications satellite expected before summer, another telecom satellite for Hughes Network Systems called the Jupiter 3 later in the year, and October's launch of NASA's Psyche probe headed the metal-rich asteroid of the same name that orbits the sun beyond Mars.

Falcon Heavy has no problem sending payloads off toward Mars as proven by its first ever flight in 2018 that sent up Elon Musk's Tesla roadster into space acting as the test payload for the new rocket. SpaceX followed that up with a commercial payload in April 2019 and then a Department of Defense mission in June 2019 before more than a three-year drought between launches three and four.

Falcon Heavy will eventually make way for SpaceX's in-development Starship and Super Heavy rocket, which could see its first orbital launch

as early as February, Musk said this month. When it blasts off, it will more than triple the power of Falcon Heavy and if successful make it the most powerful rocket to ever launch from Earth.

For now, though, Falcon Heavy remains one of the best shows in town.

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Citation: SpaceX sends up Falcon Heavy on sunset launch for Space Force (2023, January 16) retrieved 6 July 2024 from https://phys.org/news/2023-01-spacex-falcon-heavy-sunset-space.html

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