

Watch SpaceX launch its final Falcon 9 rocket of the year for the Air Force



On Sunday morning, SpaceX will attempt to launch a new GPS satellite for the US Air Force from Florida – the last mission of the year for the company. If successful, SpaceX will finish 2018 with 21 launches and beat out its own record of 18 missions last year. However, viewers won't get to see one of SpaceX's rocket landings this time around, as the Falcon 9 rocket carrying the satellite will be deposited in the ocean.

SpaceX has been trying to get this launch off the ground for the last week, but a combination of bad weather and strange sensor readings on the rocket forced the company to push back the mission until this weekend. There was also some concern that a looming government shutdown might affect operations this weekend. For its Florida launches, SpaceX relies on assistance from the US Air Force's 45th Space Wing, which oversees flights out of Cape Canaveral. The 45th Space Wing helps to clear the airspace for launches, provides weather

reports, and sets up road closures to make sure the public stays clear of the site.

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However, funding for the Department of Defense has already been appropriated for fiscal year 2019, so a partial shutdown won't affect the US Air Force. “In the event of a government shutdown in December of this year, the Air Force does not anticipate an impact to our ability to conduct launch operations,” a public affairs spokesperson for Air Force Space Command tells *The Verge* in a statement.

So apart from an issue with the rocket, the main thing that could stand in SpaceX's way is weather, and it looks like the company is in luck. There's a 95 percent chance that weather will be good for launch, according to the 45th Space Wing.

SpaceX's payload is the GPS III SV01, the first of 10 updated GPS III satellites the Air Force plans to launch. It's meant to join the Air Force's current GPS constellation already in orbit, and when the new system becomes fully operational, it's expected to be three times more accurate than the GPS we use now. That won't happen for a few years though, as the Air Force is still working on the ground control system needed to control this next generation of navigation.

Both the weight of the spacecraft and the satellite's high altitude orbit mean that SpaceX will not be landing the Falcon 9 rocket after launch. Nearly all the propellant on board will be reserved for launch, and there won't be much left over to perform a powered landing with the vehicle's engines. To really emphasize that point, the landing legs and grid fins used for steering the rocket during landing have been removed from the vehicle.

But viewers can still catch the actual launch portion of the flight this weekend. Takeoff is scheduled for 8:51AM ET from

Cape Canaveral Air Force Station, and the company has a launch window that extends until 9:17AM ET. SpaceX's coverage will begin about 15 minutes before liftoff, so check back tomorrow morning for a pre-Christmas rocket launch.

Update December 22nd, 9:30AM ET: *The launch on Saturday had to be delayed, due to high winds in the upper altitudes. SpaceX will try again on Sunday, December 23rd at 8:51AM ET.*

<https://www.theverge.com/2018/12/21/18151626/spacex-falcon-9-gps-iii-launch-air-force-watch-live>