



# Launch Mission Execution Forecast

**Mission:** Falcon 9 Starlink L-17

**Issued:** 15 Feb 2021/ 1100L (1600Z)

**Valid:** 17 Feb 2021/ 0045 – 0106L (0545 – 0606Z)



**Forecast Discussion:** A low pressure system is generating in the Gulf of Mexico while a weak frontal boundary remains stalled across North-Central Florida. This low will shift northeast into the Deep South this evening, pulling the frontal boundary that's been creating all the unsettled weather north of the Spaceport. In the meantime, Florida will still be unseasonably warm, so isolated afternoon showers and thunderstorms are possible through the day. On Tuesday, the low pressure system quickly slides northeast through New England and into the North Atlantic. The associated cold front will weaken significantly and pass through Central Florida and stall south of the Spaceport prior to the launch window Tuesday Night. Weather conditions will be favorable for a launch attempt Tuesday night with light northwesterly winds and a low cloud deck. Only a small concern exists for the Cumulus Cloud Rule, should the front stall closer to the Spaceport than expected.

On Wednesday, another low pressure system generates across the western Gulf of Mexico and lifts northward into the lower Mississippi Valley. This will shift the frontal boundary stalled south of the Spaceport northward as a warm front, bringing scattered showers and thunderstorms back into the forecast, with most convective activity ending around sunset. The position of the frontal boundary should be far enough northward during the backup launch attempt late Wednesday night to keep shower chances and thunderstorm concerns low, but a tightening pressure gradient will cause wind speeds out of the south to increase rapidly. Latest atmospheric model runs have trended higher with expected liftoff winds during the backup window. Therefore, we have increased the probability of violation for backup window, with the primary concern being Liftoff Winds. The Cumulus Cloud Rule will be a distant secondary concern should the warm front be closer to the Spaceport than currently forecast.

		Probability of Violating Weather Constraints					
<b>Launch Day</b>	<b>20%</b>	Primary Concern: Cumulus Cloud Rule					
	Weather Conditions				Additional Risk Criteria		
	<b>Weather/Visibility:</b> None / 7 mi.	<b>Clouds</b>			<b>Upper-Level Wind Shear:</b> Low		
	<b>Temp/Humidity:</b> 63°F / 80%	Type	Coverage	Base (ft)	Tops (ft)	<b>Booster Recovery Weather:</b> Moderate	
<b>Liftoff Winds (200'):</b> 350° 5 - 10 mph	Cumulus	Scattered	3,000	6,000	<b>Solar Activity:</b> Low		
		Probability of Violating Weather Constraints					
<b>24-Hour Delay</b>	<b>50%</b>	Primary Concerns: Liftoff Winds, Cumulus Cloud Rule					
	Weather Conditions				Additional Risk Criteria		
	<b>Weather/Visibility:</b> Iso Showers / 7 mi.	<b>Clouds</b>			<b>Upper-Level Wind Shear:</b> Low		
	<b>Temp/Humidity:</b> 70°F / 95%	Type	Coverage	Base (ft)	Tops (ft)	<b>Booster Recovery Weather:</b> Moderate	
<b>Liftoff Winds (200'):</b> 160° 25 - 30 mph	Cumulus	Scattered	1,500	6,000	<b>Solar Activity:</b> Low		

*Note: The Probability of Violation (POV) is the chance that a Lightning Launch Commit Criteria (LLCC) or certain user constraints (surface winds, precipitation, and temperatures, etc.) will be violated during the launch window. It does not take into account upper-level wind shear, booster recovery weather, and solar activity.*

**Next Forecast Will Be Issued** 16 February 2021