



# Launch Mission Execution Forecast

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

**Issued:** 29 Jan 2021/ 0900L (1400Z)

**Valid:** 31 Jan 2021/ 0652 – 0713L (1152 – 1213Z)



**Forecast Discussion:** High pressure will build across the Southeastern US today and linger through Saturday, creating beautiful weather for the Spaceport. Breezy conditions will gradually subside this afternoon as the pressure gradient relaxes from north to south. Northerly winds will veer to the east Saturday, moderating cool temperatures back to seasonal normals. On Sunday, high pressure exits into the western Atlantic as a low pressure system organizes over the Carolinas. The Spaceport will be within the warm sector of the approaching storm system during the primary launch window. However, favorable weather is expected, with most clouds lacking the vertical extent needed to become sufficiently electrified. Southwesterly winds will increase to near 20 miles per hour (up to 200 feet) in response to the tightening pressure gradient. The primary concern will be the Cumulus Cloud Rule for a launch attempt Sunday morning.

Late Sunday and early Monday, an upper level trough will dig into the Southeastern US, pushing the low pressure system into the western Atlantic. A cold front associated with the low pressure system will slide through the Florida Peninsula, potentially passing the Spaceport near or prior to the launch window. Scattered showers are expected in the wake of the passing boundary, but the main concern will be escalating winds, which may be sustained near 30 mph (up to 200 feet). As a result, the primary concern during the backup launch window will be Liftoff Winds, with the Cumulus Cloud Rule a distant second.

		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> 58°F / 80%	Type	Coverage	Base (ft)	Tops (ft)	<b>Booster Recovery Weather:</b> Moderate
<b>Liftoff Winds (200'):</b> 190° 17 - 22 mph	Cumulus	Scattered	2,500	5,000	<b>Solar Activity:</b> Low	
		Probability of Violating Weather Constraints				
<b>24-Hour Delay</b>	<b>40%</b>	Primary Concerns: Liftoff Winds, Cumulus Cloud Rule				
	Weather Conditions			Additional Risk Criteria		
	<b>Weather/Visibility:</b> Sct Showers / 7 mi.	<b>Clouds</b>			<b>Upper-Level Wind Shear:</b> Moderate	
	<b>Temp/Humidity:</b> 60°F / 70%	Type	Coverage	Base (ft)	Tops (ft)	<b>Booster Recovery Weather:</b> High
<b>Liftoff Winds (200'):</b> 270° 25 - 30 mph	Cumulus	Broken	2,000	7,000	<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** 30 Jan 2021