



Launch Mission Execution Forecast

Mission: Falcon 9 Starlink L-17

Issued: 30 Jan 2021/ 0930L (1430Z)

Valid: 1 Feb 2021/ 0631 – 0652L (1131 – 1152Z)



Forecast Discussion: A sunny day is in store for the Spaceport as high pressure dominates the Southeast US. Winds will gradually shift easterly, shutting off cold air advection out of the north and allowing temperatures to moderate back to near 70 degrees. On Sunday, winds shift out of the southwest ahead of an incoming cold front. Temperatures will rise to the mid-70s in the afternoon. Scattered showers ahead of the front will move through Central Florida Sunday night and early Monday morning. The thunderstorm threat with the passing front will be rather low across the Spaceport early Monday. However, a tight pressure gradient due to the proximity of the deepening low pressure system along the Carolina coastline will create strong winds, possibly sustained near 30 mph during the launch window. As a result, the main concern during the launch window will be Liftoff Winds, in addition to the Cumulus Cloud Rule.

Following the passage of the surface front, an energetic upper level trough digs sharply into the Deep South as the surface low wobbles off the Mid-Atlantic Coastline. Strong cold air advection will occur across the Florida Peninsula through Monday and into Tuesday, aided by brisk northwesterly flow due to the lasting tight pressure gradient. Temperatures may be near, if not below, the 40 degree mark across the Spaceport during the backup launch window. With yet another forecast of sustained flow near 30 mph, Liftoff Winds will be the main concern for a launch attempt Tuesday morning. However, due to the fact that the freezing level will be much closer to the surface than usual Tuesday morning, any clouds with vertical depth may have the potential to violate the Thick Cloud Layer Rule as well.

		Probability of Violating Weather Constraints				
Launch Day	40%	Primary Concern: Liftoff Winds, Cumulus Cloud Rule				
	Weather Conditions				Additional Risk Criteria	
	Weather/Visibility: Sct Showers / 7 mi.	Clouds			Upper-Level Wind Shear: Moderate	
	Temp/Humidity: 59°F / 80%	Type	Coverage	Base (ft)	Tops (ft)	Booster Recovery Weather: High
Liftoff Winds (200'): 270° 25 - 30 mph	Cumulus	Scattered	3,000	6,000	Solar Activity: Low	
		Probability of Violating Weather Constraints				
24-Hour Delay	40%	Primary Concerns: Liftoff Winds, Thick Cloud Layer Rule				
	Weather Conditions				Additional Risk Criteria	
	Weather/Visibility: None / 7 mi.	Clouds			Upper-Level Wind Shear: Moderate	
	Temp/Humidity: 41°F / 80%	Type	Coverage	Base (ft)	Tops (ft)	Booster Recovery Weather: High
Liftoff Winds (200'): 300° 25 - 30 mph	Stratocumulus	Scattered	3,500	6,000	Solar Activity: Low	
<i>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.</i>						
Next Forecast Will Be Issued		31 Jan 2021				