



Launch Mission Execution Forecast

Mission: Falcon 9 Starlink L-17

Issued: 1 Feb 2021/ 1100L (1600Z)

Valid: 3 Feb 2021/ 0547 – 0608L (1047 – 1108Z)



Forecast Discussion: A significant change is in store for the weather today as cold air rushes in behind the cold front that passed this morning, aided by a digging upper level trough. Humidity levels will take a nosedive today as temperatures stay in low 60s, with a plummet to near 40 (or below) expected overnight. A strong low pressure system off the Carolina coast will slowly meander northward to the mid-Atlantic and then New England through Wednesday. This slow motion will maintain a tight pressure gradient tight locally, keeping sustained winds out of the northwest in the 20-30 mph range. While overall cloud cover will decrease in coverage across the Spaceport today, moisture wrapping around the low will keep a thin stratocumulus deck in place into Tuesday. Improving conditions are expected Tuesday afternoon into early Wednesday as the low pressure system accelerates farther north, allowing the system to loosen its grip on our local weather. Expect mostly sunny conditions to return with winds decreasing gradually. The question continues to be how fast our pressure gradient will relax by the opening of the launch window. The primary concern for the launch window will be Liftoff Winds due to sustained flow near 20-25 mph. Despite the breezy conditions, mostly clear skies will allow radiational cooling to drop temperatures near or below 40 degrees during the primary launch window, with wind chills in the low 30s.

Conditions improve substantially Wednesday evening into Thursday morning as high pressure builds over the Florida Peninsula. Expect mostly clear skies with gradually decreasing winds near or below 10 miles per hour. Conditions will be ideal for launch early Thursday morning with only a very slight concern for liftoff winds if the low pressure area moves out slower than forecast. Temperatures will again be in the sub-40 degree range during the back launch window, but wind chill won't be as much of a factor due to the drop in the winds.

		Probability of Violating Weather Constraints					
Launch Day	40%	Primary Concern: Liftoff Winds					
	Weather Conditions				Additional Risk Criteria		
	Weather/Visibility: None / 7 mi.	Clouds			Upper-Level Wind Shear: Moderate		
	Temp/Humidity: 37°F / 70%	Type	Coverage	Base (ft)	Tops (ft)	Booster Recovery Weather: High	
Liftoff Winds (200'): 320° 20 - 25 mph	Stratocumulus	Few	3,000	4,000	Solar Activity: Low		
		Probability of Violating Weather Constraints					
24-Hour Delay	<10%	Primary Concerns: Liftoff Winds					
	Weather Conditions				Additional Risk Criteria		
	Weather/Visibility: None / 7 mi.	Clouds			Upper-Level Wind Shear: Low		
	Temp/Humidity: 38°F / 70%	Type	Coverage	Base (ft)	Tops (ft)	Booster Recovery Weather: Moderate	
Liftoff Winds (200'): 340° 5 - 10 mph	Cirrostratus	Few	25,000	28,000	Solar Activity: 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 2 Feb