



Launch Mission Execution Forecast

Mission: Falcon 9 GPS III-5

Issued: 16 Jun 2021 / 0800L (1200Z)

Valid: 17 Jun 2021 / 1209 – 1225L (1609 – 1625Z)



Forecast Discussion: The very active pattern that has brought strong afternoon thunderstorms this week will continue today, due to troughing aloft, southwesterly low-level flow, and deep moisture over the Florida peninsula. The offshore winds will pin the east coast sea breeze near the coast, and favor west-to-east moving storms that increase in strength as they reach the Spaceport during the afternoon and early evening hours. Tomorrow, a front will be stalled out to our north, and the energy aloft will finally push south of the Spaceport, bringing in drier mid-level air and lowering the coverage and strength of the diurnal thunderstorm activity. However, given the continued southwest flow and moderate instability, isolated showers and storms cannot be ruled out as we head into the launch window just after noon. Because of this, the primary concerns are the Cumulus Cloud Rule and the Surface Electric Fields Rule.

There remains some forecast uncertainty for Friday, due to a tropical low likely developing and pushing northwards in the western Gulf of Mexico. While it will not directly affect our weather, a few models are indicating it will pull the mid-level energy and moisture back northwards towards Central Florida. Diurnal shower and storm activity still look marginally lower on Friday due to weaker instability, but the mid-level moisture may introduce a thick cloud layer concern. Thus, the primary concerns for Friday are the Cumulus Cloud Rule and the Thick Cloud Layers Rule.

		Probability of Violating Weather Constraints					
Launch Day	30%	Primary Concerns: Cumulus Cloud Rule, Surface Electric Fields Rule					
	Weather Conditions				Additional Risk Criteria		
	Weather/Visibility: Iso'd Showers / 7 mi.			Clouds		Upper-Level Wind Shear:	Moderate
	Temp/Humidity: 83°F / 70%	Type	Coverage	Base (ft)	Tops (ft)	Booster Recovery Weather:	Low
Liftoff Winds (200'): 220° 7 - 12 mph	Cumulus	Scattered	3,000	14,000	Solar Activity:	Low	
		Cirrostratus	Broken	27,000	30,000		
		Probability of Violating Weather Constraints					
24-Hour Delay	30%	Primary Concerns: Cumulus Cloud Rule, Thick Cloud Layers Rule					
	Weather Conditions				Additional Risk Criteria		
	Weather/Visibility: Iso'd Showers / 7 mi.			Clouds		Upper-Level Wind Shear:	Low
	Temp/Humidity: 83°F / 70%	Type	Coverage	Base (ft)	Tops (ft)	Booster Recovery Weather:	Low
Liftoff Winds (200'): VRB 5 mph	Altostratus	Broken	18,000	21,000	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		As required					