Launch Mission Execution Forecast

Mission: Falcon 9 CRS-25
Issued: 11 July 2022 / 0915L (1315Z)
Valid: 14 July 2022 / 2039-2049L (15/0039-0049Z)

Forecast Discussion: An active pattern with afternoon showers and storms will be in place for the first half of the week as the subtropical ridge axis remains to our south. This will bring low level southwesterly flow to east central Florida, which along with ample moisture and instability, will favor strong afternoon/evening thunderstorms near the Spaceport. However, by Thursday the ridge axis will migrate northward and will likely be located just north of the area. This will shift low level winds south/southeasterly, allowing the east coast seabreeze to migrate inland by the afternoon and evening hours. The seabreeze collision will trigger the bulk of the diurnal thunderstorm activity farther to our west. While an isolated shower cannot be ruled out, most of the activity is expected to remain inland during the evening hours. With upper level winds coming from the east/northeast, this will also help keep any anvil clouds associated with the storms to the west. Thus, the primary concerns are the Cumulus Cloud Rule and Flight Through Precipitation.

On Friday, the overall setup generally looks similar to Thursday. However, models are hinting that a tropical low may form in the Gulf, which as of this morning the NHC gives a 30% chance of formation in the next 5 days. While it is not expected to directly impact the Spaceport, it will help draw in more moisture over the peninsula. Shower and storm coverage will likely be higher over central Florida on Friday, but most of the activity is still expected to occur inland due to the low level southeasterly flow. The POV and main concerns remain the same as on the primary day.

Launch Day

Probability of Violating Weather Constraints[1]

30%

Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation

Weather Conditions		Clouds				Additional Risk Criteria[2]	
		Type	Coverage	Base (ft)	Tops (ft)		
Weather/Visibility:	Isold Showers / 7 mi.					**Upper-Level Wind Shear**:	Low
Temp/Humidity:	81°F / 85%	Cumulus	Scattered	3,000	10,000	**Booster Recovery Weather**:	Low
Liftoff Winds (200'):	150° 12 - 17 mph	Cirrostatus	Scattered	28,000	32,000	**Solar Activity**:	Low

24-Hour Delay

Probability of Violating Weather Constraints

30%

Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation

Weather Conditions		Clouds				Additional Risk Criteria	
		Type	Coverage	Base (ft)	Tops (ft)		
Weather/Visibility:	Isold Showers / 7 mi.					**Upper-Level Wind Shear**:	Low
Temp/Humidity:	81°F / 80%	Cumulus	Scattered	3,000	10,000	**Booster Recovery Weather**:	Low
Liftoff Winds (200'):	130° 12 - 17 mph	Cirrostratus	Scattered	27,000	32,000	**Solar Activity**:	Low

Notes

1. *The Probability of Violation (PoV) is the chance of a local safety or customer constraint violation occurring anytime during the launch window.*
2. *Additional Risk Criteria, which are not included in the PoV, are mission-specific constraints that may not include all phenomena within each risk factor.*

See https://www.patrick.spaceforce.mil/Portals/14/Weather/LaunchFAQ.pdf for more information

Next Forecast Will Be Issued 12 July 2022