



Launch Mission Execution Forecast

Mission: Falcon 9 Polaris Dawn

Issued: 9 Sep 2024 / 1200L (1600Z)

Valid: 10 Sep 2024 / 0333 - 0715L (0733 – 1115Z)



Forecast Discussion: Florida remains in a stagnant weather pattern which is expected to last through most of the week as the stalled frontal boundary persists across the area. Low level flow will be light and variable while west-southwesterly flow aloft will keep afternoon and evening rain chances high with storms favoring the east side of the peninsula. Though chances will be highest during the day, the threat for occasional showers and storms will continue through the overnight hours, including for the primary and backup launch windows early Tuesday and Wednesday morning. However, the main threat will be the Thick Cloud Layers Rule as mid and upper level clouds stream across the Spaceport in the very saturated atmosphere created by the stalled boundary.

Currently Tropical Storm Francine is expected to move into the northern Gulf coast on Wednesday, likely pulling the stalled boundary to the north. This may be enough for some slight drying going into Thursday's morning's window, lowering overnight precipitation chances. However, this is likely to be somewhat tempered by increased mid and high clouds escaping from the system across the state.

		Probability of Violating Weather Constraints ¹						
Launch Day	60%	Primary Concerns: Thick Cloud Layers Rule, Cumulus Cloud Rule, Flight Through Precipitation						
	Weather Conditions				Additional Risk Criteria ²			
	Weather:	Scattered Showers	Clouds				Upper-Level Wind Shear:	Low
	Visibility:	7 miles	Type	Coverage	Base (ft)	Tops (ft)	Ascent Corridor Recovery:	Moderate
	Temp/Humidity:	80°F / 90%	Cumulus	Scattered	2,500	12,000	Booster Recovery Weather:	Low
Liftoff Winds (200'):	060° 5 – 10 mph		Altostratus	Overcast	15,000	20,000	Solar Activity:	Low
		Probability of Violating Weather Constraints						
24-Hour Delay	60%	Primary Concerns: Thick Cloud Layers Rule, Cumulus Cloud Rule, Flight Through Precipitation						
	Weather Conditions				Additional Risk Criteria			
	Weather:	Scattered Showers	Clouds				Upper-Level Wind Shear:	Low
	Visibility:	7 miles	Type	Coverage	Base (ft)	Tops (ft)	Ascent Corridor Recovery:	Moderate
	Temp/Humidity:	80°F / 90%	Cumulus	Scattered	2,500	12,000	Booster Recovery Weather:	Low-Mod
Liftoff Winds (200'):	100° 5 – 10 mph		Altostratus	Overcast	14,000	20,000	Solar Activity:	Low
		Probability of Violating Weather Constraints						
48-Hour Delay	50%	Primary Concerns: Thick Cloud Layers Rule, Cumulus Cloud Rule, Flight Through Precipitation						
	Weather Conditions				Additional Risk Criteria			
	Weather:	isolated Showers	Clouds				Upper-Level Wind Shear:	Low
	Visibility:	7 miles	Type	Coverage	Base (ft)	Tops (ft)	Ascent Corridor Recovery:	Moderate
	Temp/Humidity:	81°F / 90%	Cumulus	Scattered	3,000	12,000	Booster Recovery Weather:	Low-Mod
Liftoff Winds (200'):	110° 7 – 12 mph		Cirrostratus	Overcast	20,000	30,000	Solar Activity:	Low
Notes	1. The Probability of Violation (PoV) is the chance of a local safety or customer constraint violation occurring any random time 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		As Needed						