



Launch Mission Execution Forecast

Mission: Falcon 9 Axiom-3

Issued: 17 Jan 2024 / 1245L (1745Z)

Valid: 18 Jan 2024 / 1643 - 1654L (2143 - 2154Z)



Forecast Discussion: Post-frontal high-pressure center over the southeastern US will continue its eastward slide into the Atlantic on Thursday, veering local Spaceport winds out of the south-southeast and introducing low-level moisture. Models continue to oscillate around how much northward movement the old frontal boundary will have, and therefore how much instability the Spaceport will see. They have now swung back towards a more unstable solution, with increasing clouds and chances for showers or even a storm. This results in an increased threat for Cumulus Cloud Rule violations as well as Flight Through Precipitation for the primary launch window Wednesday afternoon. However, given the high uncertainty of the forecast, and the limited depth of the moisture return, overall POVs remain on the lower side.

Models seem to have settled on Friday's frontal passage occurring earlier in the day as the parent low races up the east coast. The threat for precipitation during the backup window has diminished from earlier forecasts, but lingering clouds and drizzle will keep chances for cumulus clouds and precipitation into the backup window.

A strong area of high pressure will overspread the eastern half of the US behind the front for the upcoming weekend, making its way eastward during the day on Saturday. The only weather concern will be liftoff winds with the robust pressure gradient bringing breezy to windy conditions.

Launch Day	Probability of Violating Weather Constraints ¹							
	20%	Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation						
	Weather Conditions				Additional Risk Criteria ²			
	Weather:	None	Clouds				Upper-Level Wind Shear:	Low
			Type	Coverage	Base (ft)	Tops (ft)		
Visibility:	7 miles	Cumulus	Broken	3,000	11,000	Ascent Corridor Recovery:	Low-Mod	
Temp/Humidity:	70°F / 80%	Cirrostratus	Broken	30,000	35,000	Solar Activity:	Low	
Liftoff Winds (200'):	190° 10 - 15 mph							
24-Hour Delay	Probability of Violating Weather Constraints							
	20%	Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation						
	Weather Conditions				Additional Risk Criteria			
	Weather:	None	Clouds				Upper-Level Wind Shear:	Low-Mod
			Type	Coverage	Base (ft)	Tops (ft)		
Visibility:	7 miles	Cumulus	Broken	3,000	10,000	Ascent Corridor Recovery:	High	
Temp/Humidity:	70°F / 80%	Cirrostratus	Broken	24,000	35,000	Solar Activity:	Low	
Liftoff Winds (200'):	300° 12 - 17 mph							
48-Hour Delay	Probability of Violating Weather Constraints							
	5%	Primary Concerns: Liftoff Winds						
	Weather Conditions				Additional Risk Criteria			
	Weather:	None	Clouds				Upper-Level Wind Shear:	Low-Mod
			Type	Coverage	Base (ft)	Tops (ft)		
Visibility:	7 miles	Stratocumulus	Few	2,500	4,000	Ascent Corridor Recovery:	High	
Temp/Humidity:	52°F / 68%					Solar Activity:	Low	
Liftoff Winds (200'):	340° 20 - 25 mph							
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						