



Launch Mission Execution Forecast



Mission: Falcon 9 Starlink 4-37

Issued: 16 Dec 2022 / 1245L (1745Z)

Valid: 17 Dec 2022 / 1617 – 1708L (2117 – 2208Z)

Forecast Discussion: Moisture will begin to increase tomorrow afternoon as a mid-level disturbance moves in from the west. High pressure will remain in control of our weather today, as the front that pushed through yesterday remains well to our south. By tomorrow, although the front stays south, cloud cover will begin to increase by the afternoon, and showers will move in during the evening and overnight hours. While the launch window is likely earlier than when the bulk of the precipitation will arrive, mid and upper-level cloud cover out ahead of the system will begin to stream in from the west. Because of this, the primary concern for tomorrow's attempt is the Thick Cloud Layers Rule.

By Sunday, the disturbance will move out, and another boundary will push through during the morning hours. Behind it, a reinforcing shot of cooler and drier air will filter in as winds increase and shift to the north. The primary concerns for the backup window are the Thick Cloud Layers Rule for any lingering cloud cover and Liftoff Winds.

Launch Day		Probability of Violating Weather Constraints ¹					
		40%	Primary Concerns: Thick Cloud Layers Rule				
		Weather Conditions				Additional Risk Criteria ²	
		Weather/Visibility: Isol Showers / 7 mi.	Clouds			Upper-Level Wind Shear: Low	
			Type	Coverage	Base (ft)	Tops (ft)	
		Temp/Humidity: 67°F / 65%	Altostratus	Broken	7,000	12,000	Booster Recovery Weather: Low-Mod
		Liftoff Winds (200'): 040° 7 - 12 mph	Cirrostratus	Broken	25,000	30,000	Solar Activity: Low
24-Hour Delay		Probability of Violating Weather Constraints					
		20%	Primary Concerns: Liftoff Winds, Thick Cloud Layers Rule				
		Weather Conditions				Additional Risk Criteria	
		Weather/Visibility: None / 7 mi.	Clouds			Upper-Level Wind Shear: Low	
			Type	Coverage	Base (ft)	Tops (ft)	
		Temp/Humidity: 60°F / 70%	Cirrus	Scattered	30,000	35,000	Booster Recovery Weather: Mod-High
		Liftoff Winds (200'): 350° 17 - 22 mph					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		As required					