Launch Mission Execution Forecast

Mission: Falcon Heavy GOES-U
Issued: 23 Jun 2024 / 1415L (1815Z)
Valid: 25 Jun 2024 / 1701 – 1931L (2101 – 2331Z)

Forecast Discussion: Deep tropical moisture will remain over the Florida peninsula through next week as the Atlantic ridge axis slowly slides southwards over the next few days. By tomorrow, the ridge axis will migrate just south of the Spaceport as an upper-level trough and surface boundary dig into the Southeastern US. This will cause light, offshore low-level winds before the afternoon sea breeze develops. The high levels of moisture, combined with the southwesterly flow and sufficient instability, will increase afternoon shower and storm chances next week. On both Tuesday and Wednesday, the east coast sea breeze will form and trigger showers/storms in the early to mid-afternoon, before the evening launch window opens. Due to the offshore flow being light, the sea breeze front will likely be able to migrate inland as the afternoon progresses. However, with the westerly steering and upper-level flow, the storms and their associated anvil clouds will slowly push eastwards back towards the coast, leading to several Lightning Launch Commit Criteria concerns related to these convective clouds. Given the evening launch window, the probability of violation is elevated for both the launch and back-up days, with the primary concerns being the Cumulus Cloud, Anvil Cloud, and Surface Electric Fields Rules.

Launch Day

Probability of Violating Weather Constraints[1]

70%

Primary Concerns: Cumulus Cloud Rule, Anvil Cloud Rules, Surface Electric Fields Rule

Weather Conditions						Additional Risk Criteria[2]	
		Clouds					
		Type	Coverage	Base (ft)	Tops (ft)		
Weather/Visibility:	Sct Storms / 7 mi.					**Upper-Level Wind Shear**:	Low
Temp/Humidity:	83°F / 85%	Cumulus	Scattered	3,000	22,000	**Booster Recovery Weather**:	Low
Liftoff Winds (200'):	160° 10 - 15 mph	Cirrostratus	Broken	24,000	32,000	**Solar Activity**:	Low

24-Hour Delay

Probability of Violating Weather Constraints

70%

Primary Concerns: Cumulus Cloud Rule, Anvil Cloud Rules, Surface Electric Fields Rule

Weather Conditions						Additional Risk Criteria	
		Clouds					
		Type	Coverage	Base (ft)	Tops (ft)		
Weather/Visibility:	Sct Storms / 7 mi.					**Upper-Level Wind Shear**:	Low
Temp/Humidity:	82°F / 85%	Cumulus	Scattered	3,000	22,000	**Booster Recovery Weather**:	Low
Liftoff Winds (200'):	150° 10 - 15 mph	Cirrostratus	Broken	24,000	32,000	**Solar Activity**:	Low

Notes

1. *The Probability of Violation (PoV) is the chance of a local safety or customer constraint violation occurring 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	24 Jun 2024