



Launch Mission Execution Forecast

Mission: Falcon Heavy PSYCHE

Issued: 11 Oct 2023 / 0830L (1230Z)

Valid: 12 Oct 2023 / 1011 - 1021L (1411Z - 1421Z)



Forecast Discussion: Very active weather expected over the next few days as the area of low pressure over the southwestern Gulf of Mexico moves towards the northern Gulf coast. This will allow the formerly stalled boundary across South Florida to move northwards as a warm front with Spaceport weather deteriorating later today. Widespread heavy rain and storms will be overspreading the area as south-southwest winds become windy into tonight. Strong to severe storms are not out of the question late tonight into Thursday morning. The front will likely take the best rain chances north of the Spaceport by the primary launch window mid Thursday morning, but strong winds, lingering clouds, and storms in the vicinity will still pose launch concerns.

The main low will push into the Atlantic Thursday evening dragging the boundary back into Central Florida for Friday. Models differ a bit on exactly how far it gets, but the trend has been towards just enough to shift Spaceport weather into a more diurnal pattern with best chances for showers and storms later in the day. The late morning backup launch window looks to be before coverage increases, but it will be unsettled enough that early activity can't be ruled out along with anvils from any ongoing storms to the west.

The frontal system will merge with a larger northern system by the weekend, with the next cold front into the state on Saturday. Showers and storms preceding the front are expected to be on doorstep for the backup window Saturday morning.

Launch Day	Probability of Violating Weather Constraints ¹						
	80%	Primary Concerns: Liftoff Winds, Anvil Cloud Rules, Surface Electric Field Rule					
	Weather Conditions				Additional Risk Criteria ²		
	Weather/Visibility:	Thunderstorms / 5 mi.	Clouds			Upper-Level Wind Shear:	Low
		Type	Coverage	Base (ft)	Tops (ft)		
Temp/Humidity:	80°F / 80%	Cumulus	Broken	3,000	15,000	Solar Activity:	Low
Liftoff Winds (200'):	220° 20 - 25 mph	Altostratus	Overcast	15,000	25,000		
24-Hour Delay	Probability of Violating Weather Constraints						
	50%	Primary Concerns: Anvil Cloud Rules, Thick Cloud Layers Rule, Cumulus Cloud Rule					
	Weather Conditions				Additional Risk Criteria		
	Weather/Visibility:	Sct Showers / 7 mi.	Clouds			Upper-Level Wind Shear:	Low
		Type	Coverage	Base (ft)	Tops (ft)		
Temp/Humidity:	82°F / 80%	Cumulus	Scattered	3,000	12,000	Solar Activity:	Low
Liftoff Winds (200'):	230° 7 - 12 mph	Altostratus	Broken	14,000	22,000		
48-Hour Delay	Probability of Violating Weather Constraints						
	50%	Primary Concerns: Anvil Cloud Rules, Cumulus Cloud Rule					
	Weather Conditions				Additional Risk Criteria		
	Weather/Visibility:	Sct Storms / 7 mi.	Clouds			Upper-Level Wind Shear:	Low
		Type	Coverage	Base (ft)	Tops (ft)		
Temp/Humidity:	83°F / 80%	Cumulus	Scattered	3,000	16,000	Solar Activity:	Low
Liftoff Winds (200'):	250° 12 - 17 mph	Cirrostratus	Overcast	25,000	35,000		

Notes

- The Probability of Violation (PoV) is the chance of a local safety or customer constraint violation occurring anytime during the launch window.
- 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