



# Launch Mission Execution Forecast

**Mission:** Falcon 9 Polaris Dawn

**Issued:** 27 Aug 2024 / 0230L (0630Z)

**Valid:** 28 Aug 2024 / 0333 - 0901L (0733 - 1301Z)



**Forecast Discussion:** A stable pattern is expected through the end of the week as the western Atlantic ridge axis will stretch into the southeastern US in the vicinity of the staging areas. The Spaceport will continue to see prevailing onshore flow in the low to mid-levels, with dry air rotating in around a mid-level located over the Ohio River Valley. With onshore flow the east coast seabreeze will be dominant, moving quickly inland early each afternoon with shower and storm chances peaking around midday at the Spaceport before activity shifts well inland. Though passing overnight Atlantic showers can never be ruled out, with drier than normal conditions in place this threat is expected to be limited for the early morning launch windows the next few days. Cumulus Cloud Rule and Flight Through Precipitation will remain the main launch weather concerns with the threat for any given day equally distributed across the daily launch window.

With the ridge axis nearly overhead, ascent corridor winds and seas will remain favorable for the primary launch opportunity. By Thursday, the next system is expected to move off the coast of the eastern US and push the ridge axis southwards, bringing increasing winds along the corridor to end the week. Models continue to keep the higher winds and seas to the north of the staging areas, but small shifts may bring stronger winds further south.

Launch Day	Probability of Violating Weather Constraints <sup>1</sup>						
	<b>15%</b>	Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation					
	Weather Conditions				Additional Risk Criteria <sup>2</sup>		
	<b>Weather:</b>	None	Clouds			<b>Upper-Level Wind Shear:</b>	Low
<b>Visibility:</b>	7 miles	Type	Coverage	Base (ft)	Tops (ft)	<b>Ascent Corridor Recovery:</b>	Low
<b>Temp/Humidity:</b>	81°F / 85%	Cumulus	Scattered	3,000	12,000	<b>Booster Recovery Weather:</b>	Low
<b>Liftoff Winds (200'):</b>	100° 7 - 12 mph					<b>Solar Activity:</b>	Low
24-Hour Delay	Probability of Violating Weather Constraints						
	<b>10%</b>	Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation					
	Weather Conditions				Additional Risk Criteria		
	<b>Weather:</b>	None	Clouds			<b>Upper-Level Wind Shear:</b>	Low
<b>Visibility:</b>	7 miles	Type	Coverage	Base (ft)	Tops (ft)	<b>Ascent Corridor Recovery:</b>	Low-Mod
<b>Temp/Humidity:</b>	81°F / 85%	Cumulus	Few	3,000	10,000	<b>Booster Recovery Weather:</b>	Low
<b>Liftoff Winds (200'):</b>	110° 7 - 12 mph					<b>Solar Activity:</b>	Low
48-Hour Delay	Probability of Violating Weather Constraints						
	<b>15%</b>	Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation					
	Weather Conditions				Additional Risk Criteria		
	<b>Weather:</b>	None	Clouds			<b>Upper-Level Wind Shear:</b>	Low
<b>Visibility:</b>	7 miles	Type	Coverage	Base (ft)	Tops (ft)	<b>Ascent Corridor Recovery:</b>	Low-Mod
<b>Temp/Humidity:</b>	81°F / 85%	Cumulus	Scattered	3,000	12,000	<b>Booster Recovery Weather:</b>	Low
<b>Liftoff Winds (200'):</b>	120° 7 - 12 mph					<b>Solar Activity:</b>	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 <a href="https://www.patrick.spaceforce.mil/Portals/14/Weather/LaunchFAQ.pdf">https://www.patrick.spaceforce.mil/Portals/14/Weather/LaunchFAQ.pdf</a> for more information						

**Next Forecast Will Be Issued** | As Needed