



# Launch Mission Execution Forecast

**Mission:** Falcon 9 Axiom-2

**Issued:** 18 May 2023 / 1000L (1400Z)

**Valid:** 21 May 2023 / 1732-1743L (2132-2143Z)



**Forecast Discussion:** A stalled boundary across Central Florida will provide added ingredients for widespread showers and thunderstorms across the area again today. On Friday, a low will form on the boundary and move north, decreasing the coverage of the storms along the Space Coast. Another boundary begins to move into the Southeast U.S. on Saturday, extending the lower storm coverage near the Spaceport. On Sunday, the boundary will likely be close to Central Florida, again providing a focusing mechanism for afternoon and evening convection. Luckily, the prevailing flow will allow the east coast sea breeze to move inland, keeping most storms away from the Spaceport. Upper-level winds will likely push anvils from the inland storms eastward, making anvil clouds the primary launch weather concern.

On Monday, long range guidance suggests a low pressure area will form somewhere on the boundary, creating messy pattern across Central Florida with widespread convection likely. The primary launch weather concerns for a Monday evening attempt include cumulus, debris, and anvil clouds associated with the thunderstorms.

The low pressure area will deepen and move towards Bermuda on Tuesday, creating strong onshore flow at the Spaceport and high winds along the ascent corridor. The primary launch weather concerns for a Tuesday attempt are Flight Through Precipitation and the Cumulus Cloud Rule associated with the onshore flow showers.

Launch Day	Probability of Violating Weather Constraints <sup>1</sup>						
	<b>40%</b>	Primary Concerns: Anvil Cloud Rule, Cumulus Cloud Rule					
	Weather Conditions				Additional Risk Criteria <sup>2</sup>		
	<b>Weather/Visibility:</b>	Isold Showers / 7 mi.	Clouds			<b>Upper-Level Wind Shear:</b>	Low
<b>Temp/Humidity:</b>	82°F / 70%	Type	Coverage	Base (ft)	Tops (ft)	<b>Ascent Corridor Recovery:</b>	Low
<b>Liftoff Winds (200'):</b>	090° 12 - 17 mph	Cumulus	Scattered	3,000	12,000	<b>Solar Activity:</b>	Low
		Cirrostratus	Scattered	28,000	30,000		
24-HR Delay	Probability of Violating Weather Constraints						
	<b>80%</b>	Primary Concerns: Anvil Cloud Rule, Cumulus Cloud Rule, Debris Cloud Rule					
	Weather Conditions				Additional Risk Criteria		
	<b>Weather/Visibility:</b>	Sct Storms / 5 mi.	Clouds			<b>Upper-Level Wind Shear:</b>	Low
<b>Temp/Humidity:</b>	80°F / 80%	Type	Coverage	Base (ft)	Tops (ft)	<b>Ascent Corridor Recovery:</b>	Moderate
<b>Liftoff Winds (200'):</b>	030° 12 - 17 mph	Cumulus	Scattered	3,000	20,000	<b>Solar Activity:</b>	Low
		Altostratus	Broken	10,000	16,000		
48-HR Delay	Probability of Violating Weather Constraints						
	<b>70%</b>	Primary Concerns: Flight Through Precipitation, Cumulus Cloud Rule, Anvil Cloud Rule					
	Weather Conditions				Additional Risk Criteria		
	<b>Weather/Visibility:</b>	Sct Showers / 7 mi.	Clouds			<b>Upper-Level Wind Shear:</b>	Low
<b>Temp/Humidity:</b>	80°F / 75%	Type	Coverage	Base (ft)	Tops (ft)	<b>Ascent Corridor Recovery:</b>	High
<b>Liftoff Winds (200'):</b>	050° 15 - 20 mph	Cumulus	Scattered	3,000	18,000	<b>Solar Activity:</b>	Low
		Altostratus	Broken	12,000	16,000		
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** 19 May 23