



# Launch Mission Execution Forecast

**Mission:** Falcon 9 NASA Crew-3

**Issued:** 1 Nov 2021 / 0830L (1230Z)

**Valid:** 3 Nov 2021 / 0105 - 0115L (0505 - 0515Z)



**Forecast Discussion:** A broad surface high encompassing much of the eastern and southeastern US will slide eastward early this week, allowing the pleasant fall weather to continue across the Spaceport. Low level flow becomes northeasterly off the Atlantic, allowing for a gradual increase in moisture, clouds, and light Atlantic showers. The main concerns for the primary launch window early Wednesday morning will be Cumulus Clouds and Flight Through Precipitation with low-topped onshore moving showers.

Deepening onshore flow, a weak boundary sliding into the state, and some upper level energy will allow for more robust Atlantic showers into the backup window early on Thursday. The main concerns for this launch attempt will be Cumulus Clouds and Flight Through Precipitation with onshore moving showers. A weak area of low pressure is expected to develop along the boundary late on Thursday, leading to unsettled conditions across the Spaceport by Friday morning. As this system takes shape, expect less favorable launch conditions as mid and upper level clouds increase along with scattered showers and the potential for a few storms.

Launch Day	Probability of Violating Weather Constraints							
	<b>20%</b>	Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation						
	Weather Conditions				Additional Risk Criteria			
	<b>Weather:</b>	Isolated Showers	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>	72°F / 68%	Cumulus	Scattered	3,500	8,000	<b>Booster Recovery Weather:</b>	Low	
<b>Liftoff Winds (200'):</b>	040° 7 - 12 mph		Cirrus	Scattered	30,000	35,000	<b>Solar Activity:</b>	Low

24-Hour Delay	Probability of Violating Weather Constraints							
	<b>30%</b>	Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation						
	Weather Conditions				Additional Risk Criteria			
	<b>Weather:</b>	Isolated Showers	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>	73°F / 73%	Cumulus	Scattered	3,000	10,000	<b>Booster Recovery Weather:</b>	Low	
<b>Liftoff Winds (200'):</b>	080° 10 - 15 mph		Cirrus	Scattered	25,000	35,000	<b>Solar Activity:</b>	Low

48-Hour Delay	Probability of Violating Weather Constraints							
	<b>50%</b>	Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation, Thick Cloud Layer Rule						
	Weather Conditions				Additional Risk Criteria			
	<b>Weather:</b>	Scattered Showers	Clouds			<b>Upper-Level Wind Shear:</b>	Low	
<b>Visibility:</b>	7 miles	Type	Coverage	Base (ft)	Tops (ft)	<b>Ascent Corridor Recovery:</b>	Moderate	
<b>Temp/Humidity:</b>	74°F / 75%	Cumulus	Scattered	3,000	10,000	<b>Booster Recovery Weather:</b>	Moderate	
<b>Liftoff Winds (200'):</b>	VRB 5 mph		Altostratus	Broken	15,000	20,000	<b>Solar Activity:</b>	Low

**Note:** The Probability of Violation (POV) is the chance that a Lightning Launch Commit Criteria (LLCC) or certain user constraints (surface winds, precipitation, and temperatures, etc.) will be violated during the launch window. It does not take into account upper-level wind shear, booster recovery weather, and solar activity.

<b>Next Forecast Will Be Issued</b>	2 Nov 2021
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