



# Launch Mission Execution Forecast

**Mission:** Falcon 9 CRS-21

**Issued:** 04 Dec 2020 / 0800L (1300Z)

**Valid:** 05 Dec 2020 / 1134 – 1145L (1634 – 1645Z)



**Forecast Discussion:** Expect increasing cloud and shower coverage today and tonight as a low pressure system along the Central Gulf Coast slides into the Deep South. A weakening cold front is expected to push through Central Florida prior to the launch window Saturday, with most of the associated rainfall impacting the Spaceport Friday night and early Saturday morning. However, a measure of cloud cover may linger behind the front across Central Florida during the launch window. Primary weather concerns during the launch window will be the Cumulus Cloud Rule, and Thick Cloud Layer Rule.

Behind the departing front, weak high pressure will move over Florida, maintaining mostly dry conditions across north and central portions of the state. However, a weak low pressure system will develop across the Central Gulf, which will potentially send an influx of mid-level clouds across the state Sunday. The primary weather concerns during the backup launch window will be the Thick Cloud Layer Rule and Cumulus Cloud Rule.

		Probability of Violating Weather Constraints																							
<b>Launch Day</b>	<b>50%</b>	<b>Primary Concerns:</b> Cumulus Cloud Rule, Thick Cloud Layer Rule																							
	Weather Conditions			Additional Risk Criteria																					
	<b>Weather/Visibility:</b> Few showers / 7 mi.	<table border="1"> <thead> <tr> <th colspan="4">Clouds</th> </tr> <tr> <th>Type</th> <th>Coverage</th> <th>Base (ft)</th> <th>Tops (ft)</th> </tr> </thead> <tbody> <tr> <td>Cumulus</td> <td>Scattered</td> <td>2,500</td> <td>4,000</td> </tr> <tr> <td>Altostratus</td> <td>Broken</td> <td>6,500</td> <td>10,000</td> </tr> <tr> <td>Altostratus</td> <td>Broken</td> <td>12,000</td> <td>19,000</td> </tr> </tbody> </table>			Clouds				Type	Coverage	Base (ft)	Tops (ft)	Cumulus	Scattered	2,500	4,000	Altostratus	Broken	6,500	10,000	Altostratus	Broken	12,000	19,000	<b>Upper-Level Wind Shear:</b> Moderate
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<b>Temp/Humidity:</b> 71°F / 70%				<b>Booster Recovery Weather:</b> High																					
<b>Liftoff Winds (200'):</b> 300° 12 – 17 mph				<b>Solar Activity:</b> Low																					
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<b>24-Hour Delay</b>	<b>30%</b>	<b>Primary Concerns:</b> Thick Cloud Layer Rule, Cumulus Cloud Rule																							
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	<b>Weather/Visibility:</b> None / 7 mi.	<table border="1"> <thead> <tr> <th colspan="4">Clouds</th> </tr> <tr> <th>Type</th> <th>Coverage</th> <th>Base (ft)</th> <th>Tops (ft)</th> </tr> </thead> <tbody> <tr> <td>Altostratus</td> <td>Broken</td> <td>13,000</td> <td>17,000</td> </tr> </tbody> </table>			Clouds				Type	Coverage	Base (ft)	Tops (ft)	Altostratus	Broken	13,000	17,000	<b>Upper-Level Wind Shear:</b> Moderate								
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<b>Temp/Humidity:</b> 62°F / 70%				<b>Booster Recovery Weather:</b> Low																					
<b>Liftoff Winds (200'):</b> 350° 10 - 15 mph				<b>Solar Activity:</b> Low																					
<i>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.</i>																									
<b>Next Forecast Will Be Issued</b>		As required																							