



# Launch Mission Execution Forecast



**Mission:** Falcon 9 COSMO-SkyMed

**Issued:** 25 Jan 2022 / 0830L (1330Z)

**Valid:** 27 Jan 2022 / 1806 – 1817L (2306 – 2317Z)

**Forecast Discussion:** A weather disturbance currently located across the central Gulf of Mexico will move east towards Florida today, leading to deteriorating weather conditions. Showers associated with this feature are likely to overspread the region later today and continue through the overnight hours into Wednesday morning. As this system moves off the Atlantic coast by Thursday, deep moisture through the atmosphere gradually gets stripped away, but robust onshore flow will still support scattered low-topped showers moving towards the coast. Thus, the main weather concerns for launch day are lingering cumulus clouds and showers embedded in this low-level onshore flow as well as breezy conditions during liftoff.

For delay day, a deep upper level trough and associated cold front will dive into the southeastern U.S., switching the low-level winds from out of the northwest. Layered moisture associated with this system suggests the potential for thick clouds as well as scattered showers embedded within lower cumulus clouds.

		Probability of Violating Weather Constraints					
<b>Launch Day</b>	<b>30%</b>	<b>Primary Concerns:</b> Cumulus Cloud Rule, Liftoff Winds					
	Weather Conditions				Additional Risk Criteria		
	<b>Weather/Visibility:</b> Sct Showers / 7 mi.	<b>Clouds</b>			<b>Upper-Level Wind Shear:</b> Low		
	<b>Temp/Humidity:</b> 63°F / 86%	Type	Coverage	Base (ft)	Tops (ft)	<b>Booster Recovery Weather:</b> Low	
<b>Liftoff Winds (200'):</b> 030° 20 - 25 mph	Cumulus	Broken	2,000	8,000	<b>Solar Activity:</b> Low		
	Cirrostratus	Broken	25,000	30,000			
		Probability of Violating Weather Constraints					
<b>24-Hour Delay</b>	<b>40%</b>	<b>Primary Concerns:</b> Thick Cloud Layers Rule, Cumulus Cloud Rule					
	Weather Conditions				Additional Risk Criteria		
	<b>Weather/Visibility:</b> Sct Showers / 7 mi.	<b>Clouds</b>			<b>Upper-Level Wind Shear:</b> Moderate		
	<b>Temp/Humidity:</b> 60°F / 82%	Type	Coverage	Base (ft)	Tops (ft)	<b>Booster Recovery Weather:</b> Low	
<b>Liftoff Winds (200'):</b> 310° 15 - 20 mph	Cumulus	Scattered	3,000	10,000	<b>Solar Activity:</b> Low		
	Altostratus	Broken	16,000	24,000			
<p><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></p>							
<b>Next Forecast Will Be Issued</b>		26 JAN 2022					