



Launch Mission Execution Forecast



Mission: Falcon 9 Cygnus NG-21

Issued: 3 Aug 2024 / 1215L (1615Z)

Valid: 4 Aug 2024 / 1101 – 1112L (1501 – 1512Z)

Forecast Discussion: Deteriorating weather conditions will continue across the Space Coast as Tropical Depression Four (TD 4) slowly makes its way from Northwest Cuba into the eastern Gulf of Mexico. The official forecast from the National Hurricane Center has the system becoming a Tropical Storm Sunday and skirting the western Florida Peninsula throughout the day. The system is expected to make landfall in Florida Big Bend Monday morning and slowly drift to Southeast Georgia Monday night. The Space Coast will remain on the eastern side of the system upon its slow approach Sunday, with fast moving squalls bringing numerous rounds of heavy rain and strong winds. As a result, the Probability of Violation (POV) is very high for the initial launch window Sunday morning.

For the backup launch window Monday morning, the weather will remain poor with a similar POV as deep tropical moisture lingering as the Tropical System slides into the Florida Big Bend and Northeast Florida. Winds will remain strong with tropical squalls moving through Central Florida.

		Probability of Violating Weather Constraints ¹				
Launch Day	90%	Primary Concerns: Cumulus Cloud Rule, Surface Winds, Surface Electric Fields Rule				
	Weather Conditions			Additional Risk Criteria ²		
	Weather/Visibility: Num showers / 7 mi.	Clouds				Upper-Level Wind Shear: Low
		Type	Coverage	Base (ft)	Tops (ft)	
Temp/Humidity: 87°F / 70%	Cumulus	Scattered	3,000	12,000	Booster Recovery Weather: Low	
Liftoff Winds (200'): 150° 27 - 32 mph	AltoCumulus	Scattered	16,000	30,000	Solar Activity: Low	
		Probability of Violating Weather Constraints				
24-Hour Delay	85%	Primary Concerns: Cumulus Cloud Rule, Surface Winds, Surface Electric Fields Rule				
	Weather Conditions			Additional Risk Criteria		
	Weather/Visibility: Num showers / 7 mi.	Clouds				Upper-Level Wind Shear: Low
		Type	Coverage	Base (ft)	Tops (ft)	
Temp/Humidity: 87°F / 80%	Cumulus	Scattered	3,000	12,000	Booster Recovery Weather: Low	
Liftoff Winds (200'): 180° 25 - 30 mph	AltoCumulus	Broken	16,000	30,000	Solar Activity: 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 https://www.patrick.spaceforce.mil/Portals/14/Weather/LaunchFAQ.pdf for more information				
Next Forecast Will Be Issued		As Required				