



Launch Mission Execution Forecast

Mission: Atlas V Lucy

Issued: 14 Oct 2021 / 0800L (1200Z)

Valid: 16 Oct 2021 / 0534 – 0649L (0934 – 1049Z)



Forecast Discussion: For MLP Roll today, a surface high over the southeast brings winds from the northeast up to 15kt during the day and a few light rain showers moving onshore. By Fri, high pressure settles into the area bringing pleasant dry weather. For launch day on Sat, the surface high sits right over central FL with the mid-level ridge still over us. This brings continued pleasant weather and light winds with just a few Cumulus Clouds possible. For backup day on Sun, a cold front is forecast to move through the Cape right before or during the window. With limited mid-level support, this will bring a narrow band of scattered showers and taller cumulus clouds, with winds immediately picking up from the north behind the front. Therefore, the primary concerns for the 24-hr backup day are the Cumulus Cloud Rule and Ground Winds. For the 48-hr backup day on Mon, the front is forecast to be south of the FL peninsula, with high pressure building over the Carolina's bringing a tighter pressure gradient and just a few onshore moving showers. Therefore, the primary concerns for Monday are the Cumulus Cloud Rule and Ground Winds.

Launch Day	Probability of Violating Weather Constraints					
	10%	Primary Concerns: Cumulus Cloud Rule				
	Weather Conditions				Additional Risk Criteria	
	Weather/Visibility: None / 7 mi.	Clouds				Solar Activity: Low
Temp/Humidity: 74-76°F / 82%	Type	Coverage	Base (ft)	Tops (ft)		
Ground Winds (230'): 290° @ 6 knots	Cumulus	Few	2,000	5,000		
24-Hour Delay	Probability of Violating Weather Constraints					
	50%	Primary Concerns: Cumulus Cloud Rule, Ground Winds				
	Weather Conditions				Additional Risk Criteria	
	Weather/Visibility: Few Showers / 7 mi.	Clouds				Solar Activity: Low
Temp/Humidity: 74-76°F / 87%	Type	Coverage	Base (ft)	Tops (ft)		
Ground Winds (230'): 340° @ 18 - 25 knots	Cumulus	Scattered	2,000	20,000		
48-Hour Delay	Probability of Violating Weather Constraints					
	30%	Primary Concerns: Cumulus Cloud Rule, Ground Winds				
	Weather Conditions				Additional Risk Criteria	
	Weather/Visibility: Isolated Showers / 7 mi.	Clouds				Solar Activity: Low
Temp/Humidity: 74-76°F / 78%	Type	Coverage	Base (ft)	Tops (ft)		
Ground Winds (230'): 040° @ 15 - 20 knots	Cumulus	Scattered	2,000	8,000		

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 and solar activity.

Next Forecast Will Be Issued 15 Oct 2021