



# Launch Mission Execution Forecast

**Mission:** Atlas V Lucy

**Issued:** 13 Oct 2021 / 0800L (1200Z)

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



**Forecast Discussion:** For MLP Roll day Thu, a surface high over the southeast will bring winds from the northeast up to 16kt during the day and a few light rain showers moving onshore. For exposure 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, long range models are in agreement on a cool front moving through early Sun morning. With limited mid-level support and instability with this front, the main concerns will be showers and winds nearing liftoff constraints from the north immediately 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 stalls over south FL with high pressure building over the Carolina's bringing a tighter pressure gradient and onshore moving showers. Therefore, the primary concerns for Monday are the Cumulus Cloud Rule and Ground Winds.

Launch Day	Probability of Violating Weather Constraints				
	<b>10%</b>	Primary Concerns: Cumulus Cloud Rule			
	Weather Conditions				Additional Risk Criteria
	<b>Weather/Visibility:</b> None / 7 mi. <b>Temp/Humidity:</b> 74-76°F / 82% <b>Ground Winds (230'):</b> 280° @ 6 knots	<b>Clouds</b> Type: Cumulus Coverage: Few Base (ft): 2,000 Tops (ft): 4,000	<b>Solar Activity:</b> Low		

24-Hour Delay	Probability of Violating Weather Constraints				
	<b>50%</b>	Primary Concerns: Cumulus Cloud Rule, Ground Winds			
	Weather Conditions				Additional Risk Criteria
	<b>Weather/Visibility:</b> Few Showers / 7 mi. <b>Temp/Humidity:</b> 74-76°F / 87% <b>Ground Winds (230'):</b> 360° @ 18 - 25 knots	<b>Clouds</b> Type: Cumulus Coverage: Scattered Base (ft): 2,000 Tops (ft): 20,000	<b>Solar Activity:</b> Low		

48-Hour Delay	Probability of Violating Weather Constraints				
	<b>40%</b>	Primary Concerns: Cumulus Cloud Rule, Ground Winds			
	Weather Conditions				Additional Risk Criteria
	<b>Weather/Visibility:</b> Isolated Showers / 7 mi. <b>Temp/Humidity:</b> 74-76°F / 78% <b>Ground Winds (230'):</b> 040° @ 15 - 20 knots	<b>Clouds</b> Type: Cumulus Coverage: Scattered Base (ft): 2,000 Tops (ft): 12,000	<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 and solar activity.*

**Next Forecast Will Be Issued** 14 Oct 2021