



Launch Mission Execution Forecast



Mission: ASTRA VCLS DEMO 2

Issued: 3 Feb 2022 / 0800L (1300Z)

Valid: 5 Feb 2022 / 1300 – 1600L (1800 – 2100Z)

Forecast Discussion: Drier, warmer weather continues through Friday with mid-level ridging in place. The surface high pressure ridge is to our north, with a moderate pressure gradient over central Florida, bringing breezy conditions in the afternoons from the southeast, as high as 20kt. This stronger onshore flow could bring an isolated light rain shower moving onshore by late week.

For launch day Saturday, long range models are in agreement in bringing a shallow cold front through the Spaceport Saturday morning sometime between 05-10L. This will bring rain showers in the morning extending into the early part of the count, and switch winds around from the north increasing to 15-20kt behind the front before the window. This is expected to bring some weather violations during the early part of the count, with just a deck of lower cumulus clouds and a slight potential for some light lingering rain into the early part of the launch window. Therefore, the primary concerns for launch are the Cumulus Cloud Rule and Liftoff Winds. For the backup forecast, a surface low develops off the coast of the Spaceport along the frontal boundary, leaving a higher chance for more convective rain showers. Therefore, the backup day POV has been increased with the primary concerns being the Cumulus Cloud Rule and Surface Electric Fields Rule.

Launch Day	Probability of Violating Weather Constraints					
	40%	Primary Concerns: Cumulus Cloud Rule, Liftoff Winds				
	Weather Conditions				Additional Risk Criteria	
	Weather/Visibility: Few Showers / 7 mi.	Clouds			Upper-Level Wind Shear: Low	
	Type	Coverage	Base (ft)	Tops (ft)		
Temp/Humidity: 66°F / 90%	Cumulus	Few	2,000	9,000	Solar Activity: N/A	
Liftoff Winds (30'): 360° 15 - 20 kts	Stratocumulus	Overcast	2,000	6,000		

24-Hour Delay	Probability of Violating Weather Constraints					
	60%	Primary Concerns: Cumulus Cloud Rule, Surface Electric Fields Rule				
	Weather Conditions				Additional Risk Criteria	
	Weather/Visibility: Sct. Showers / 7 mi.	Clouds			Upper-Level Wind Shear: Low	
	Type	Coverage	Base (ft)	Tops (ft)		
Temp/Humidity: 67°F / 86%	Cumulus	Scattered	3,000	16,000	Solar Activity: N/A	
Liftoff Winds (30'): 350° 7 - 12 kts						

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.

Next Forecast Will Be Issued 4 Feb 2022