Launch Mission Execution Forecast

Mission: Falcon 9 Starlink 4-22
Issued: 16 Jul 2022 / 0745L (1145Z)
Valid: 17 Jul 2022 / 1020 – 1220L (1420 – 1620Z)

Forecast Discussion: The upper level low that was to our east has opened into a weak trough across the state that will persist into Sunday. This will leave the door open for tropical moisture to continue to be pulled northwards across the Florida peninsula. It will be an unsettled day across the Spaceport, with periods of showers and occasional storms. Another batch of convection is expected to develop over South Florida late tonight into Sunday morning and lift north towards the area. With low level and steering flow becoming south to south-southwest, the highest coverage may be just offshore of the Cape, but the associated clouds will be across the entire area. Depending on how quickly this occurs, the window for the primary launch attempt late Sunday morning may be in a lull in activity between overnight storms and those trigged by daytime heating. However even in this lull, abundant mid and upper level clouds in addition to remnant anvils from earlier activity will be a concern in addition to any showers in the vicinity.

The deepest moisture moves out on Monday as flow returns back out of the southwest. This will focus afternoon activity back towards the Spaceport, but also bring drier weather in the morning. The main concern for the backup launch day late Monday morning will be the Cumulus Cloud Rule with any early developing showers.

Launch Day

Probability of Violating Weather Constraints[1]

50%

Primary Concerns: Thick Cloud Layer Rule, Cumulus Cloud Rule, Anvil Cloud Rules

Weather Conditions						Additional Risk Criteria[2]	
Weather/Visibility:	Isold Showers / 7 mi.	**Clouds**				**Upper-Level Wind Shear**:	Low
		Type	Coverage	Base (ft)	Tops (ft)		
Temp/Humidity:	82°F / 83%	Cumulus	Scattered	3,500	10,000	**Booster Recovery Weather**:	Low
Liftoff Winds (200'):	160° 10 - 15 mph	Altostratus	Overcast	12,000	20,000	**Solar Activity**:	Low

24-Hour Delay

Probability of Violating Weather Constraints

20%

Primary Concerns: Cumulus Cloud Rule

Weather Conditions						Additional Risk Criteria	
Weather/Visibility:	None / 7 mi.	**Clouds**				**Upper-Level Wind Shear**:	Low
		Type	Coverage	Base (ft)	Tops (ft)		
Temp/Humidity:	84°F / 70%	Cumulus	Scattered	3,500	8,000	**Booster Recovery Weather**:	Low
Liftoff Winds (200'):	200° 5 - 10 mph	Cirrostratus	Scattered	30,000	35,000	**Solar Activity**:	Low

Notes

1. *The Probability of Violation (PoV) is the chance of a local safety or customer constraint violation occurring anytime 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 Needed