



Launch Mission Execution Forecast

Mission: Falcon 9 Turksat-5B

Issued: 17 Dec 2021 / 0830L (1330Z)

Valid: 18 Dec 2021 / 2258 – 19/0028L (19/0358 – 0528Z)



Forecast Discussion: Surface high pressure situated across the central Atlantic will provide dry weather today into tonight. A frontal boundary is forecast to approach from the northwest Saturday, with the onshore component to the wind becoming increasingly moist and unstable over the weekend. Therefore the primary weather concern for launch day is cumulus clouds potentially associated with showers in advance of this front.

For the delay day, the front is expected to stall nearby, allowing additional moisture convergence and a greater potential for showers and layered thick clouds.

Probability of Violating Weather Constraints																													
Launch Day	20% Primary Concerns: Cumulus Cloud Rule																												
	Weather Conditions																												
	<table border="1"> <thead> <tr> <th rowspan="2">Weather/Visibility:</th> <th rowspan="2">Isol Showers / 7 mi.</th> <th colspan="4">Clouds</th> <th rowspan="2">Upper-Level Wind Shear:</th> <th rowspan="2">Low</th> </tr> <tr> <th>Type</th> <th>Coverage</th> <th>Base (ft)</th> <th>Tops (ft)</th> </tr> </thead> <tbody> <tr> <td>Temp/Humidity:</td> <td>69°F / 90%</td> <td>Cumulus</td> <td>Scattered</td> <td>3,000</td> <td>12,000</td> <td>Booster Recovery Weather:</td> <td>Low</td> </tr> <tr> <td>Liftoff Winds (200'):</td> <td>170° 10 - 15 mph</td> <td></td> <td></td> <td></td> <td></td> <td>Solar Activity:</td> <td>Low</td> </tr> </tbody> </table>	Weather/Visibility:	Isol Showers / 7 mi.	Clouds				Upper-Level Wind Shear:	Low	Type	Coverage	Base (ft)	Tops (ft)	Temp/Humidity:	69°F / 90%	Cumulus	Scattered	3,000	12,000	Booster Recovery Weather:	Low	Liftoff Winds (200'):	170° 10 - 15 mph					Solar Activity:	Low
	Weather/Visibility:			Isol Showers / 7 mi.	Clouds					Upper-Level Wind Shear:	Low																		
Type		Coverage	Base (ft)		Tops (ft)																								
Temp/Humidity:	69°F / 90%	Cumulus	Scattered	3,000	12,000	Booster Recovery Weather:	Low																						
Liftoff Winds (200'):	170° 10 - 15 mph					Solar Activity:	Low																						
Additional Risk Criteria																													
Probability of Violating Weather Constraints																													
24-Hour Delay	40% Primary Concerns: Cumulus Cloud Rule, Thick Cloud Layers Rule																												
	Weather Conditions																												
	<table border="1"> <thead> <tr> <th rowspan="2">Weather/Visibility:</th> <th rowspan="2">Sct Showers / 7 mi.</th> <th colspan="4">Clouds</th> <th rowspan="2">Upper-Level Wind Shear:</th> <th rowspan="2">Moderate</th> </tr> <tr> <th>Type</th> <th>Coverage</th> <th>Base (ft)</th> <th>Tops (ft)</th> </tr> </thead> <tbody> <tr> <td>Temp/Humidity:</td> <td>66°F / 93%</td> <td>Cumulus</td> <td>Scattered</td> <td>2,500</td> <td>12,000</td> <td>Booster Recovery Weather:</td> <td>Low</td> </tr> <tr> <td>Liftoff Winds (200'):</td> <td>360° 10 - 15 mph</td> <td>Altostratus</td> <td>Broken</td> <td>10,000</td> <td>19,000</td> <td>Solar Activity:</td> <td>Low</td> </tr> </tbody> </table>	Weather/Visibility:	Sct Showers / 7 mi.	Clouds				Upper-Level Wind Shear:	Moderate	Type	Coverage	Base (ft)	Tops (ft)	Temp/Humidity:	66°F / 93%	Cumulus	Scattered	2,500	12,000	Booster Recovery Weather:	Low	Liftoff Winds (200'):	360° 10 - 15 mph	Altostratus	Broken	10,000	19,000	Solar Activity:	Low
	Weather/Visibility:			Sct Showers / 7 mi.	Clouds					Upper-Level Wind Shear:	Moderate																		
Type		Coverage	Base (ft)		Tops (ft)																								
Temp/Humidity:	66°F / 93%	Cumulus	Scattered	2,500	12,000	Booster Recovery Weather:	Low																						
Liftoff Winds (200'):	360° 10 - 15 mph	Altostratus	Broken	10,000	19,000	Solar Activity:	Low																						
Additional Risk Criteria																													
<i>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.</i>																													
Next Forecast Will Be Issued	As Required																												