



# Launch Mission Execution Forecast



**Mission:** Falcon 9 Starlink 4-25

**Issued:** 21 July 2022 / 0800L (1200Z)

**Valid:** 24 July 2022 / 0809 – 0949L (1209 – 1349Z)

**Forecast Discussion:** After several days of southwest flow and evening thunderstorms along the Space Coast, the subtropical ridge axis is finally shifting north today! This will allow the east coast sea breeze to move inland unimpeded as low-level winds become southerly, keeping most of the late afternoon and evening convection west of the Spaceport. On Friday, the ridges axis moves north of the area, making low-level winds southeasterly which encourages rapid inland migration of the east coast sea breeze, further decreasing thunderstorm chances along the Space Coast. Saturday will be much the same locally, with the addition of a mid-level trough moving into the Bahamas causing enhanced cloudiness and precipitation coverage. On Sunday, this feature will bring the enhanced cloudiness and instability close to the Spaceport and the nearshore waters. The primary weather concerns for a Sunday morning launch attempt are the Cumulus and Anvil Cloud Rules associated with this feature.

The mid-level trough should be north of Central Florida by launch time Monday morning, decreasing the cloudiness and instability, though the primary launch concerns remain the Cumulus and Anvil Cloud Rules.

| Launch Day                          |  | Probability of Violating Weather Constraints <sup>1</sup> |   |             |           |                                       |                                  |                        |     |     |
|-------------------------------------|--|---|---|-------------|-----------|---------------------------------------|----------------------------------|------------------------|-----|-----|
|                                     |  | <b>20%</b>  | Primary Concerns: Cumulus Cloud Rule, Anvil Cloud Rules |             |           |                                       |                                  |                        |     |     |
|                                     |  | Weather Conditions  |   |             |           | Additional Risk Criteria <sup>2</sup> |                                  |                        |     |     |
|                                     |  | <b>Weather/Visibility:</b>                                | Isold Showers / 7 mi.                                   | Clouds      |           |                                       | <b>Upper-Level Wind Shear:</b>   |                        | Low |     |
|                                     |  |   | Type  | Coverage    | Base (ft) | Tops (ft)                             | <b>Booster Recovery Weather:</b> |                        | Low |     |
|                                     |  | <b>Temp/Humidity:</b>                                     | 84°F / 75%  | Cumulus     | Scattered | 3,000                                 | 10,000                           | <b>Solar Activity:</b> |     | Low |
|                                     |  | <b>Liftoff Winds (200'):</b>                              | 120° 10 - 15 mph  | Altostratus | Scattered | 15,000                                | 18,000                           |                        |     |     |
| 24-Hour Delay                       |  | Probability of Violating Weather Constraints              |   |             |           |                                       |                                  |                        |     |     |
|                                     |  | <b>20%</b>  | Primary Concerns: Cumulus Cloud Rule, Anvil Cloud Rules |             |           |                                       |                                  |                        |     |     |
|                                     |  | Weather Conditions  |   |             |           | Additional Risk Criteria              |                                  |                        |     |     |
|                                     |  | <b>Weather/Visibility:</b>                                | Isold Showers / 7 mi.                                   | Clouds      |           |                                       | <b>Upper-Level Wind Shear:</b>   |                        | Low |     |
|                                     |  |   | Type  | Coverage    | Base (ft) | Tops (ft)                             | <b>Booster Recovery Weather:</b> |                        | Low |     |
|                                     |  | <b>Temp/Humidity:</b>                                     | 84°F / 75%  | Cumulus     | Scattered | 3,000                                 | 10,000                           | <b>Solar Activity:</b> |     | Low |
|                                     |  | <b>Liftoff Winds (200'):</b>                              | 140° 10 - 15 mph  | Altostratus | Scattered | 15,000                                | 18,000                           |                        |     |     |
| Notes                               | <ol style="list-style-type: none"> <li>The Probability of Violation (PoV) is the chance of a local safety or customer constraint violation occurring anytime during the launch window.</li> <li>Additional Risk Criteria, which are not included in the PoV, are mission-specific constraints that may not include all phenomena within each risk factor.</li> </ol> |   |   |             |           |                                       |                                  |                        |     |     |
|                                     | See <a href="https://www.patrick.spaceforce.mil/Portals/14/Weather/LaunchFAQ.pdf">https://www.patrick.spaceforce.mil/Portals/14/Weather/LaunchFAQ.pdf</a> for more information   |   |   |             |           |                                       |                                  |                        |     |     |
| <b>Next Forecast Will Be Issued</b> |  | 22 July 2022  |   |             |           |                                       |                                  |                        |     |     |