



# Launch Mission Execution Forecast

**Mission:** Falcon 9 Polaris Dawn

**Issued:** 26 Aug 2024 / 0345L (0745Z)

**Valid:** 27 Aug 2024 / 0333 - 0901L (0733 - 1301Z)



**Forecast Discussion:** Weak low over the open Atlantic this morning will continue to move farther out to sea, taking with it the boundary that has lingered in the vicinity for the past week. The western Atlantic ridge will rebuild west later today with its axis across the staging areas into the Carolinas. For the Spaceport, this will bring a continuing pattern the next few days of prevailing onshore flow with shower and storm chances peaking around midday before most activity shifts well inland. With the early morning launch windows, Atlantic showers, along with the associated Cumulus Cloud Rule and Flight Through Precipitation, remain the main launch weather concern with the threat for any given day equally distributed across the daily launch window. The threat for showers will lower for the backup windows as a drier airmass filters in.

Ascent corridor winds and seas are forecast to be favorable for the primary and initial backup day with the ridge across much of the corridor and its axis generally across the staging areas. The next system developing over the eastern US is expected to result in increasing winds along the corridor into Thursday, but for now the trend remains for the higher winds and seas to be just north of the staging areas.

| Launch Day                          | Probability of Violating Weather Constraints <sup>1</sup>   |  |           |           |                                       |                                  |         |
|-------------------------------------|---|--|-----------|-----------|---------------------------------------|----------------------------------|---------|
|                                     | <b>20%</b>  | Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation |           |           |                                       |                                  |         |
|                                     | Weather Conditions  |  |           |           | Additional Risk Criteria <sup>2</sup> |                                  |         |
|                                     | <b>Weather:</b>   | Isolated Showers   | Clouds    |           |                                       | <b>Upper-Level Wind Shear:</b>   | Low     |
| <b>Visibility:</b>                  | 7 miles   | Type   | Coverage  | Base (ft) | Tops (ft)                             | <b>Ascent Corridor Recovery:</b> | Low     |
| <b>Temp/Humidity:</b>               | 81°F / 85%  | Cumulus  | Scattered | 3,000     | 15,000                                | <b>Booster Recovery Weather:</b> | Low     |
| <b>Liftoff Winds (200'):</b>        | 100° 10 - 15 mph  |  |           |           |                                       | <b>Solar Activity:</b>           | Low     |
| 24-Hour Delay                       | Probability of Violating Weather Constraints  |  |           |           |                                       |                                  |         |
|                                     | <b>10%</b>  | Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation |           |           |                                       |                                  |         |
|                                     | Weather Conditions  |  |           |           | Additional Risk Criteria              |                                  |         |
|                                     | <b>Weather:</b>   | None   | Clouds    |           |                                       | <b>Upper-Level Wind Shear:</b>   | Low     |
| <b>Visibility:</b>                  | 7 miles   | Type   | Coverage  | Base (ft) | Tops (ft)                             | <b>Ascent Corridor Recovery:</b> | Low     |
| <b>Temp/Humidity:</b>               | 81°F / 85%  | Cumulus  | Scattered | 3,000     | 12,000                                | <b>Booster Recovery Weather:</b> | Low     |
| <b>Liftoff Winds (200'):</b>        | 100° 10 - 15 mph  |  |           |           |                                       | <b>Solar Activity:</b>           | Low     |
| 48-Hour Delay                       | Probability of Violating Weather Constraints  |  |           |           |                                       |                                  |         |
|                                     | <b>10%</b>  | Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation |           |           |                                       |                                  |         |
|                                     | Weather Conditions  |  |           |           | Additional Risk Criteria              |                                  |         |
|                                     | <b>Weather:</b>   | None   | Clouds    |           |                                       | <b>Upper-Level Wind Shear:</b>   | Low     |
| <b>Visibility:</b>                  | 7 miles   | Type   | Coverage  | Base (ft) | Tops (ft)                             | <b>Ascent Corridor Recovery:</b> | Low-Mod |
| <b>Temp/Humidity:</b>               | 81°F / 85%  | Cumulus  | Few       | 3,000     | 10,000                                | <b>Booster Recovery Weather:</b> | Low     |
| <b>Liftoff Winds (200'):</b>        | 120° 10 - 15 mph  |  |           |           |                                       | <b>Solar Activity:</b>           | Low     |
| Notes                               | 1. The Probability of Violation (PoV) is the chance of a local safety or customer constraint violation occurring any random time 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 <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> |   | As Needed  |           |           |                                       |                                  |         |