



# Launch Mission Execution Forecast



**Mission:** Falcon 9 Starlink 6-53

**Issued:** 22 Apr 2024 / 1430L (1830Z)

**Valid:** 23 Apr 2024 / 1815 – 2215L (2215 – 24/0215Z)

**Forecast Discussion:** The frontal boundary has cleared South Florida early this afternoon as its parent low continues to move further out into the western Atlantic. Can't rule out the possibility of a sprinkle or light shower across the Spaceport as the north-northeasterly wind surge arrives, but overall expect simply cloudy and breezy conditions into tonight.

High pressure quickly drops into the southeastern US overnight, centering just offshore NE Florida on Tuesday. The proximity of the high center will keep east-northeast flow light going into the launch window Tuesday evening, but also allow a low-topped, mixed stratocumulus-cumulus deck to stream onshore. These are not expected to be a launch weather concern as their height will be limited by drier conditions aloft.

The low level ridge axis will be directly overhead on Wednesday, allowing for the development of both the east coast and Gulf coast sea breezes during the afternoon. The east coast sea breeze will drive locally breezy southeasterly winds at the Spaceport, but conditions look too dry for more than passing cumulus clouds with its inland movement. No significant launch weather concerns are expected for the Wednesday evening window.

| Probability of Violating Weather Constraints <sup>1</sup> |  |                     |              |              |           |                           |     |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
|---|--|---------------------|--------------|--------------|-----------|---------------------------|-----|-------------------------|-----|-------------------------|----------|-----------|-----------|----------------|------------|---------------|-----------|-------|-------|---------------------------|-----|-----------------------|------------------|--------------|-----------|--------|--------|-----------------|-----|
| <b>Launch Day</b>   | <b>&lt;5%</b> Primary Concerns: Cumulus Cloud Rule   |                     |              |              |           |                           |     |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
|   | Weather Conditions   |                     |              |              |           |                           |     |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
|   | <table border="1"> <thead> <tr> <th rowspan="2">Weather/Visibility:</th> <th rowspan="2">None / 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>72°F / 65%</td> <td>Stratocumulus</td> <td>Scattered</td> <td>3,500</td> <td>6,000</td> <td>Booster Recovery Weather:</td> <td>Low</td> </tr> <tr> <td>Liftoff Winds (200'):</td> <td>070° 10 - 15 mph</td> <td>Cirrostratus</td> <td>Scattered</td> <td>30,000</td> <td>35,000</td> <td>Solar Activity:</td> <td>Low</td> </tr> </tbody> </table> | Weather/Visibility: | None / 7 mi. | Clouds       |           |                           |     | Upper-Level Wind Shear: | Low | Type                    | Coverage | Base (ft) | Tops (ft) | Temp/Humidity: | 72°F / 65% | Stratocumulus | Scattered | 3,500 | 6,000 | Booster Recovery Weather: | Low | Liftoff Winds (200'): | 070° 10 - 15 mph | Cirrostratus | Scattered | 30,000 | 35,000 | Solar Activity: | Low |
|   | Weather/Visibility:  |                     |              | None / 7 mi. | Clouds    |                           |     |                         |     | Upper-Level Wind Shear: | Low      |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
| Type  |  | Coverage            | Base (ft)    |              | Tops (ft) |                           |     |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
| Temp/Humidity:  | 72°F / 65%   | Stratocumulus       | Scattered    | 3,500        | 6,000     | Booster Recovery Weather: | Low |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
| Liftoff Winds (200'):                                     | 070° 10 - 15 mph   | Cirrostratus        | Scattered    | 30,000       | 35,000    | Solar Activity:           | Low |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
| Additional Risk Criteria <sup>2</sup>                     |  |                     |              |              |           |                           |     |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
| Probability of Violating Weather Constraints              |  |                     |              |              |           |                           |     |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
| <b>24-Hour Delay</b>                                      | <b>&lt;5%</b> Primary Concerns: None   |                     |              |              |           |                           |     |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
|   | Weather Conditions   |                     |              |              |           |                           |     |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
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|   | Weather/Visibility:  |                     |              | None / 7 mi. | Clouds    |                           |     |                         |     | Upper-Level Wind Shear: | Low      |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
| Type  |  | Coverage            | Base (ft)    |              | Tops (ft) |                           |     |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
| Temp/Humidity:  | 72°F / 55%   | Cumulus             | Few          | 3,000        | 6,000     | Booster Recovery Weather: | Low |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
| Liftoff Winds (200'):                                     | 110° 12 - 17 mph   |                     |              |              |           | Solar Activity:           | Low |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
| Additional Risk Criteria                                  |  |                     |              |              |           |                           |     |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |
| <b>Notes</b>  | <ol style="list-style-type: none"> <li>The Probability of Violation (PoV) is the chance of a local safety or customer constraint violation occurring any random time 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>                       | As Needed  |                     |              |              |           |                           |     |                         |     |                         |          |           |           |                |            |               |           |       |       |                           |     |                       |                  |              |           |        |        |                 |     |