

GUIDANCE ✦ PROTECTION ✦ ALLEGIANCE

NROL

85

VANDENBERG
SPACE FORCE BASE

NATIONAL RECONNAISSANCE OFFICE



NROL-85

The National Reconnaissance Office (NRO) is proud to partner with SpaceX on our second launch of 2022. NROL-85 is NRO's first NROL mission to reuse a SpaceX Falcon 9 rocket booster and will be launched from the same rocket that launched the NROL-87 mission. Launched only two months earlier, NROL-87 was the first NRO launch of a SpaceX Falcon 9 rocket intended to be reused for a future mission. The NROL-85 mission will launch from Vandenberg Space Force Base (VSFB), California, and carry a national security payload designed, built, and operated by NRO.

NRO Mission

For sixty years, the NRO has developed, acquired, launched and operated the satellites that are the foundation for America's advantage and strength in space. Using a diversified and resilient architecture of spacecraft, NRO collects and delivers the best space-based intelligence, surveillance, and reconnaissance content on the planet. NRO data supports the National Security Agency, National Geospatial-Intelligence Agency, and other NRO mission partners to produce intelligence products for the President, Congress, national policymakers, warfighters, and civil users. The NRO's hybrid overhead architecture designed to provide global coverage against a wide range of intelligence requirements, carry out research and development efforts, and assist emergency and disaster-relief efforts in the U.S. and around the world.



In the NROL-85 patch, three stars represent guidance, protection, and allegiance. The cat represents loyalty and devotion shared among our nation and partners. The tiger in the cat's reflection demonstrates that while space can be challenging, a determined attitude helps NRO succeed in going Above and Beyond to meet the most difficult challenges we face in protecting our nation.

To read more about NRO launches and previous patches, visit www.NRO.gov/launch.



Rocket & Launch Facts

Falcon 9 is a two-stage rocket designed and manufactured by SpaceX for the reliable and safe transport of satellites and the Dragon spacecraft into orbit. This will be the 17th launch of the Falcon 9 rocket and the 22nd from VSF.

Fairing

Made of a carbon composite material, the fairing protects satellites on their way to orbit. The fairing is jettisoned approximately three minutes into flight, and SpaceX continues to recover fairings for reuse on future missions.

First Stage

Falcon 9's first stage incorporates nine Merlin engines and aluminum-lithium alloy tanks containing liquid oxygen and rocket-grade kerosene (RP-1) propellant, generating more than 1.7 million pounds of thrust at sea level.

After separation, the first stage will return to Landing Zone 4.

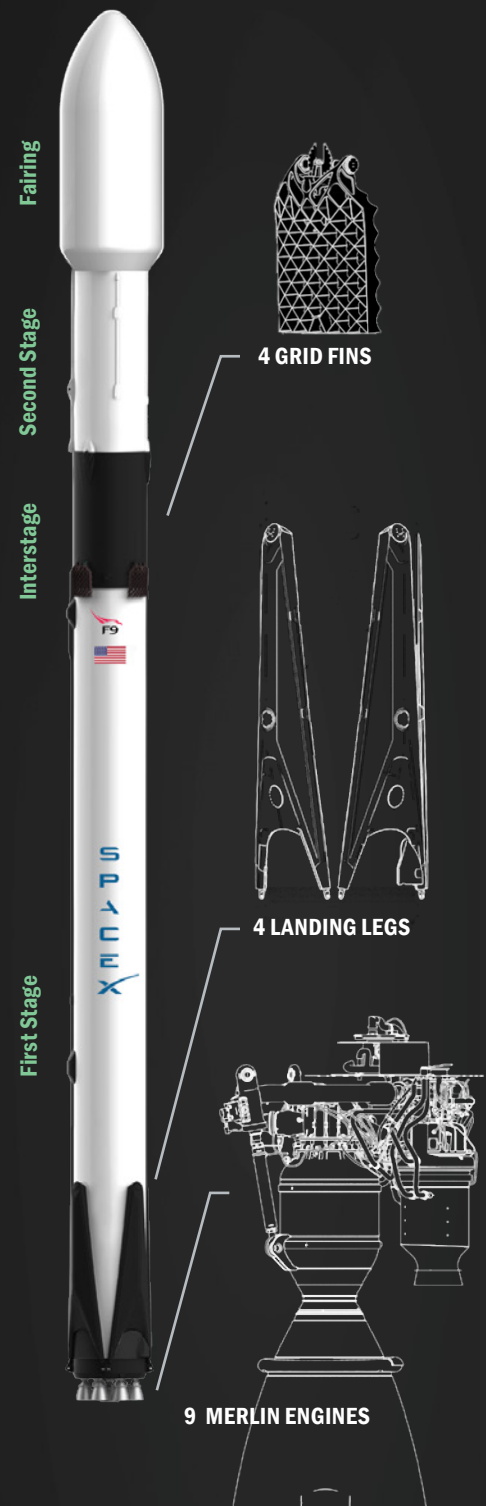
Interstage

The interstage is a composite structure that connects the first and second stages, and houses the pneumatic pushers that allow the first and second stage to separate during flight.

Grid fins: Falcon 9 is equipped with four hypersonic grid fins positioned at the base of the interstage. They orient the rocket during reentry by moving the center of pressure.

Second Stage

Powered by a single Merlin Vacuum Engine, the second stage delivers Falcon 9's payload to the desired orbit. The engine ignites a few seconds after stage separation, and can be restarted several times to place multiple payloads into different orbits.





Site Info

VSFB is headquarters to Space Launch Delta 30. SLD 30 manages Department of Defense space and missile testing, and placement of satellites into orbit from the U.S. west coast. On Sept. 27, 2021, VSFB launched their 2,000th rocket into orbit

Space Launch Complex 4E (SLC-4E)

SLC-4E was formerly called PALC2-4 and previously used by Atlas and Titan rockets between 1963 and 2005. It was built for use by Atlas-Agena rockets, but was later rebuilt to handle Titan rockets. The designation SLC-4E was applied at the time of the conversion to launch Titans. SLC-4E is leased as a launch site for the Falcon 9 rocket, which first flew from VSFB on Sept. 29, 2013 following a 24-month refurbishment program, which had started in early 2011.

Landing Zone 4 (LZ-4)

SpaceX began a five-year lease of Launch Complex 4 West in February 2015. The site is used as a landing pad to bring back Vertical Take Off Vertical Landing Return-To-Launch-Site first-stage boosters of the reusable Falcon 9 launch vehicle. That pad was later named by SpaceX as Landing Zone 4, and first used operationally for a Falcon 9 booster landing in 2018.





Recent Success

The NRO is the best in the world at providing overhead intelligence, surveillance, and reconnaissance to more than **a half-million government users**—including every member of the Intelligence Community, two dozen domestic agencies, our nation’s military, lawmakers, and decision makers.

In February 2022, NRO launched the **NROL-87** mission aboard a SpaceX Falcon 9 for the first launch of 2022. **The rocket body from NROL-87 will be used during NROL-85, an NRO first.** NROL-85 is also the second SpaceX Falcon 9 launch produced through the National Security Space Launch Contract.

Visit www.NRO.gov to view launch press releases.

[NRO Mission Overview](#)



NROL-87 launches out of VAFB, February 2022.



Future Launches

NRO has a busy launch year planned for 2022, with more than a half-dozen launches scheduled and nearly a dozen payloads planned for orbit. The year kicked off with NROL-87 in February out of Vandenberg Space Force Base and is followed by NROL-85 using the same rocket booster, just two months later. Millions of people depend on the vital intelligence NRO capabilities provide every day. Additional information on upcoming launches will be made available at www.NRO.gov.



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MEDIA@NRO.MIL



703.808.1198



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