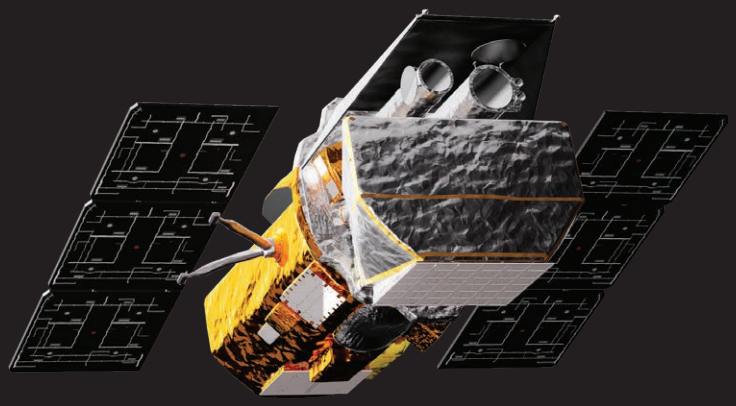
National Aeronautics and Space Administration

NASA

NASAfacts



Swift Boost

After more than two decades, the orbit of NASA's Neil Gehrels Swift Observatory has entered a phase of rapid decay. While NASA could allow the observatory to re-enter Earth's atmosphere, as many missions do at the ends of their lifetimes, this situation has presented an opportunity to advance American spacecraft servicing technology while also extending the life of a productive science mission. To accomplish this, NASA awarded the U.S. company Katalyst Space a contract in September 2025 to attempt to raise Swift's orbit.

NASA studies how the Sun impacts the space environment, including objects in low Earth orbit, and recent increased solar activity has accelerated Swift's decay. This has put NASA in a race against the clock before Swift re-enters Earth's atmosphere in fall 2026. Katalyst's robotic servicing spacecraft, LINK, will launch on its mission to boost Swift in June 2026 on Northrop Grumman's Pegasus XL rocket.

Pegasus XL is an air-launched rocket that will be integrated with LINK at NASA's Wallops Flight Facility in Virginia and then ferried underneath Northrop's L-1011 carrier aircraft to the Reagan Test Range located on Kwajalein Atoll in the South Pacific for launch. By launching from Reagan Test Range, Pegasus will be able to deliver LINK directly into Swift's orbit, where LINK will attempt to rendezvous with Swift and raise it to a higher altitude.

If this daring servicing mission is successful, it will be the first time a commercial robotic mission has captured a NASA spacecraft that is uncrewed and not originally designed to be serviced in space.

Swift boost facts

Contractor
Katalyst Space in Flagstaff, Arizona

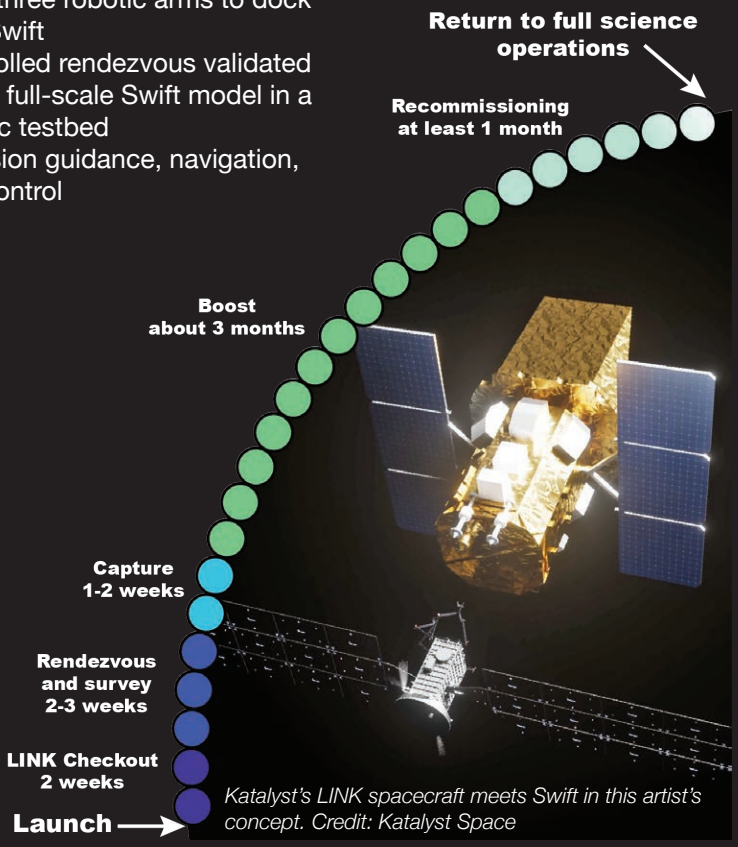
Launch vehicle
Northrop Grumman's Pegasus XL rocket

Launch location
Kwajalein Atoll, Marshall Islands

Launch date
June 2026

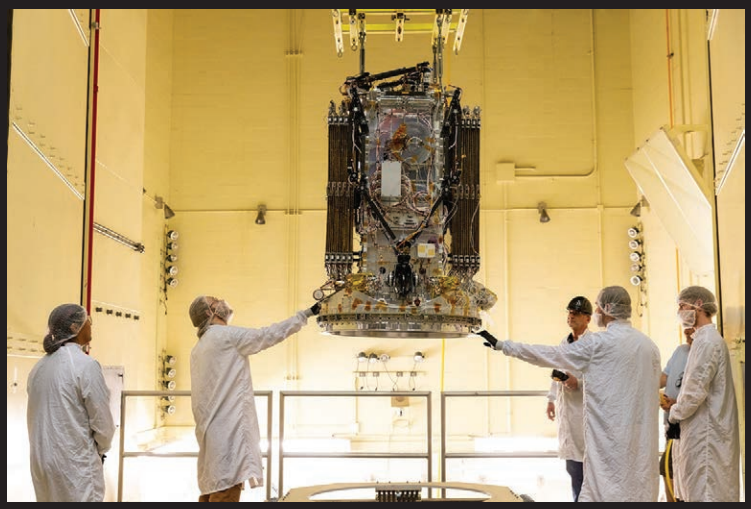
Servicing vehicle
Katalyst's LINK spacecraft

- 880 pound (400 kilogram) small satellite
- Uses three robotic arms to dock with Swift
- Controlled rendezvous validated with a full-scale Swift model in a robotic testbed
- Precision guidance, navigation, and control



Katalyst's LINK spacecraft meets Swift in this artist's concept. Credit: Katalyst Space

Northrop Grumman's Stargazer, a modified L-1011 aircraft, takes off from Vandenberg Air Force Base in California. The company's Pegasus XL rocket, carried beneath the aircraft as shown here, will launch Katalyst's LINK spacecraft. Credit: Northrop Grumman



Engineers from Katalyst stabilize their LINK robotic servicing spacecraft as it moves into a vibration chamber at NASA's Goddard Space Flight Center in Greenbelt, Md., on April 15, 2026. The vibration chamber simulated the intense shaking LINK will experience during launch. Credit: NASA/Scott Wiessinger

Swift studies gamma-ray bursts, the most powerful explosions in the universe, and other cosmic objects and events. In the more two decades since its launch, Swift has become a key part of NASA's strategy for studying fleeting and unpredictable changes in the sky from a variety of sources. With its versatility and rapid follow-up capabilities, Swift has enabled the discovery and localization of previously unknown cosmic targets. NASA then follows up these discoveries using different space telescopes, along with ground-based facilities from other agencies, to help us better understand how the universe works. By boosting Swift's orbit, NASA will retain the observatory's unique capabilities at a fraction of the cost of designing and building a new mission.

In anticipation of the boost, NASA temporarily suspended Swift science and modified its operations in a way that had never been done in the mission's lifetime. This enabled controllers to keep the spacecraft in an orientation that minimizes drag effects and extends Swift's time in orbit. To maximize the boost's chances of success, Swift's average altitude needs to be above about 185 miles (about 300 kilometers).

Mission goals

Demonstrate NASA's rapid-response capability and foster agile technology development to benefit current and future missions.

Advance U.S. private spacecraft servicing to demonstrate a key commercial capability for the future of space exploration and expand NASA's use of servicing to a new and broader class of spacecraft.

Retain Swift's unique capability to lead NASA's fleet of space telescopes in studying changes in the high-energy universe using a cost-effective approach.

Swift spacecraft facts

Launch date
Nov. 20, 2004

Type
Medium-class Explorer Mission

Instruments
- Burst Alert Telescope
- Ultraviolet/Optical Telescope
- X-ray Telescope

Collaborating Agencies
- Italian Space Agency (ASI)
- UK Space Agency

Collaborating Institutions
- Pennsylvania State University
- Mullard Space Science Laboratory
- University of Leicester
- Brera Observatory
- ASI Data Center
- Los Alamos National Laboratory

Mission Management
Goddard Space Flight Center, Greenbelt, Maryland

Program Management
NASA's Space Science Mission Operations

Mission Operations
Penn State Eberly College of Science, State College, Pennsylvania

This mosaic of M31 merges 330 individual images taken by the Ultraviolet/Optical Telescope aboard NASA's Swift spacecraft. It is the highest-resolution image of the galaxy ever recorded in the ultraviolet. The image shows a region 200,000 light-years wide and 100,000 light-years high. Credit: NASA/Swift/ Stefan Immler (GSFC) and Erin Grand (UMCP)

Resources

News and updates

Progress reports on the Swift boost mission can be found at https://science.nasa.gov/blogs/swift/

Additional information and resources for the Swift boost are available at https://science.nasa.gov/mission/swift/swift-boost-mission/

News and feature stories about Swift and its science are listed at https://science.nasa.gov/mission/swift/

On social media, Swift news is covered by NASA Universe on Facebook, X, and Instagram (@NASAUniverse on all platforms)

News from Katalyst Space is available at https://www.katalystspace.com/news

Additional information on Northrop Grumman's Pegasus XL rocket can be found at https://www.northropgrumman.com/what-we-do/space/launch-vehicles/pegasus

Multimedia resources

Videos and imagery related to the Swift mission and its science: https://svs.gsfc.nasa.gov/gallery/swift/

Historical photos and video of Swift: https://images.nasa.gov/

NASA's image use policy: https://www.nasa.gov/nasa-brand-center/images-and-media/

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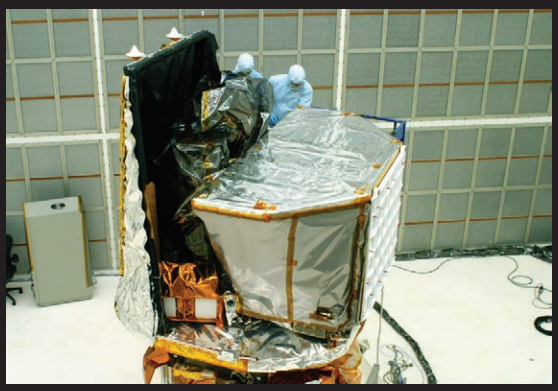

In July 2004, technicians in Hangar AE at what is now Cape Canaveral Space Force Station, Fla., remove the final pieces of protective covering from the Swift spacecraft in preparation for its November 2004 launch. Credit: NASA