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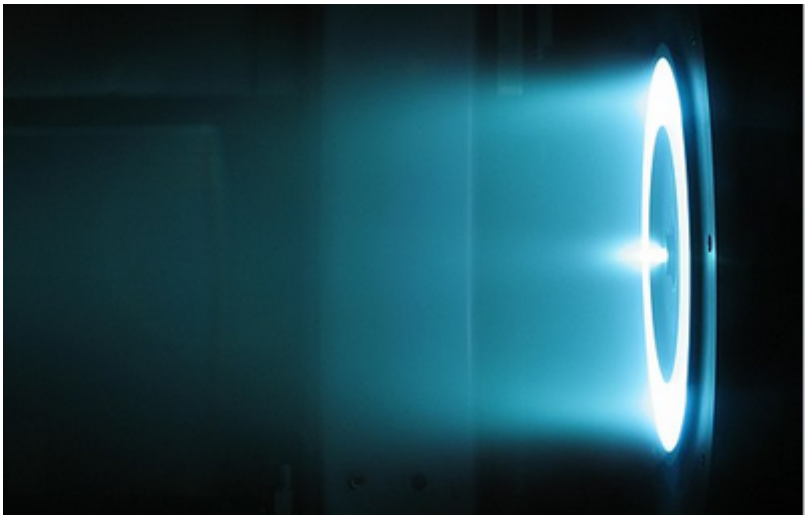
Satelite Internet Constellation

The first 27 operational satellites for Amazon's Project Kuiper were launched on April 28, 2025, at 7:01 p.m. EDT (2300 UTC) at Space Launch Complex-41 at Cape Canaveral Space Force Station in Florida using a United Launch Alliance (ULA) Atlas V rocket forming a satellite internet constellation.



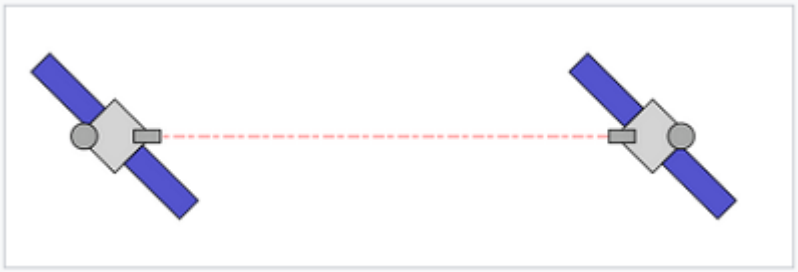
Notably, Project Kuiper will collectively consist of 3,236 satellites, which operate in 98 orbital planes in three orbital shells, one each at 590 km (370 mi), 610 km (380 mi), and 630 km (390 mi) orbital altitude. The satellites are equipped with Hall-effect thruster technology. Phase 1 deployment includes 578 satellites at 630 km altitude and an orbital inclination of 51.9 degrees. The plan for constellation development will be implemented in five (5) phases.

amazon | project kuiper

Project Kuiper be will working in concert with Amazon's large network of 12 satellite ground station facilities named the AWS Ground Station unit. An AWS Ground Station, a managed service that functions as a satellite communications hub, lets users control, process, and downlink data from satellites without building or managing a ground station infrastructure. It provides a convenient and scalable way to access satellite data for various applications, including weather forecasting, imaging, and communications.

Amazon Web Services, Inc.
aws

Ground stations connect to the ground-based internet; and the satellites will interconnect via optical infrared laser connections. Optical infrared laser connections (AKA: Laser Communication) use infrared laser light to transmit data, offering significant advantages over traditional radio frequency (RF) systems, especially in space and long-distance applications. These connections can transmit data at faster rates and with greater bandwidth, which enables faster data transfer and higher-definition video transmission.



Amazon refers to this technology as OISL (short for: optical inter-satellite link). These particular lasers are capable of maintaining 100 Gbps over distances up to 2,600 km among two satellites moving at 25,000 km/h. Current in-space tests conducted have demonstrated this speed up to a distance of 1,000km. Curious about this project? Click on the link to watch the video of the launch.

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As of April 2025, two prototype and 27 production satellites were launched.

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Flooring Network

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