Virgin ORBIT

TUBULAR BELLS 1

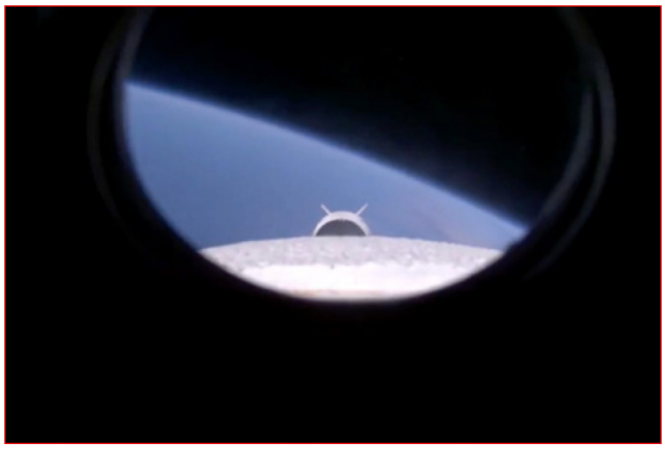
PRESS GUIDE

JUNE 2021

"A BUSINESS IS SIMPLY AN IDEA TO MAKE OTHER PEOPLE'S LIVES BETTER."

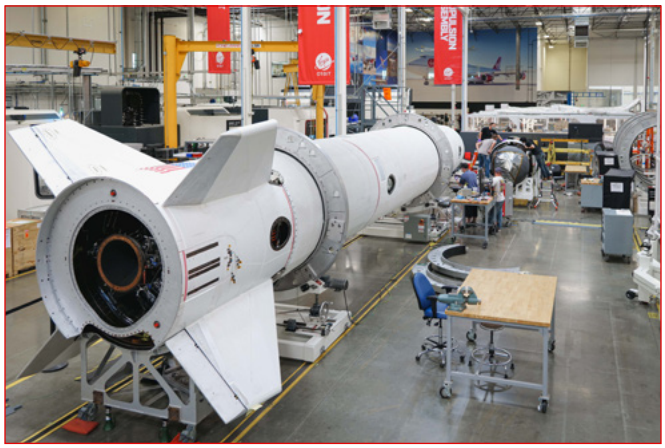
—RICHARD BRANSON

Virgin Orbit's LauncherOne rocket ignites in mid-air during the company's second Launch Demo in January 2021.

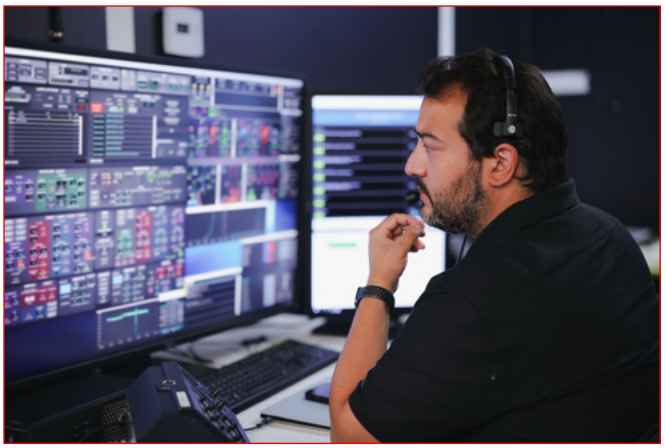


The curvature of the Earth as seen from a camera onboard LauncherOne's upper stage during Virgin Orbit's Launch Demo 2 mission. January 2021.

Filled with cryogenic propellants and pressurized to flight-like levels, LauncherOne undergoes a cryo load test on the taxiway at Mojave Air and Space Port. May 2021.

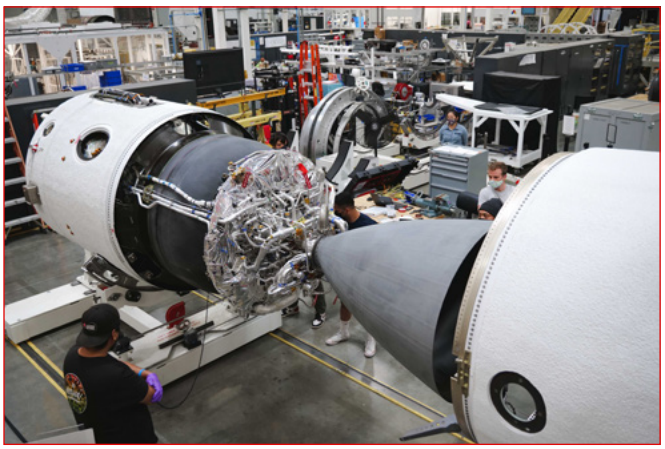


LauncherOne undergoes final integration at Virgin Orbit's manufacturing HQ in Long Beach, CA. March 2021.



Aircraft Systems and Flight Ops Manager Hadi Alaee monitors data in the Mission Control Center during a wet dress rehearsal. June 2021.

Chief Test Pilot Kelly Latimer conducts a flight test with Virgin Orbit's carrier aircraft Cosmic Girl in late November 2020.



LauncherOne undergoes final integration at Virgin Orbit's manufacturing HQ in Long Beach, CA. March 2021.

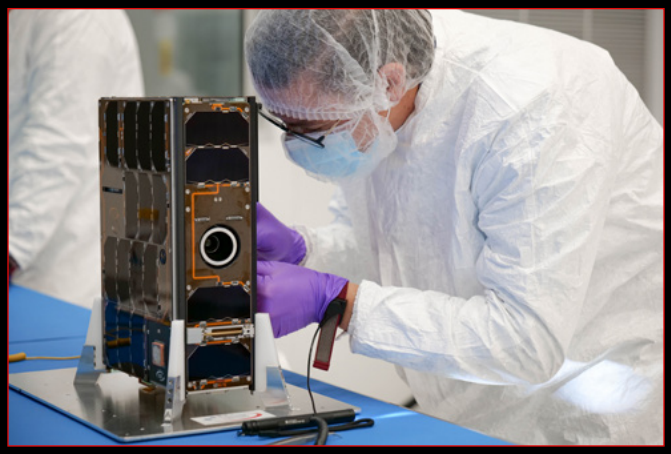
MISSION OVERVIEW

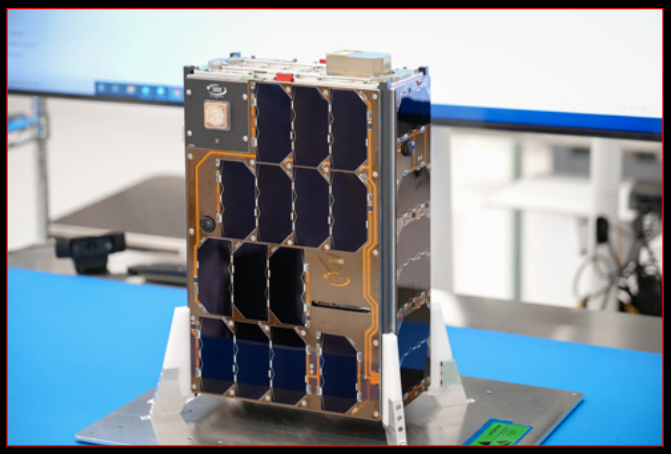
Following the team's successful orbital launch demonstration in January 2021, *Tubular Bells: Part One* marks the next step in Virgin Orbit's commercial service.

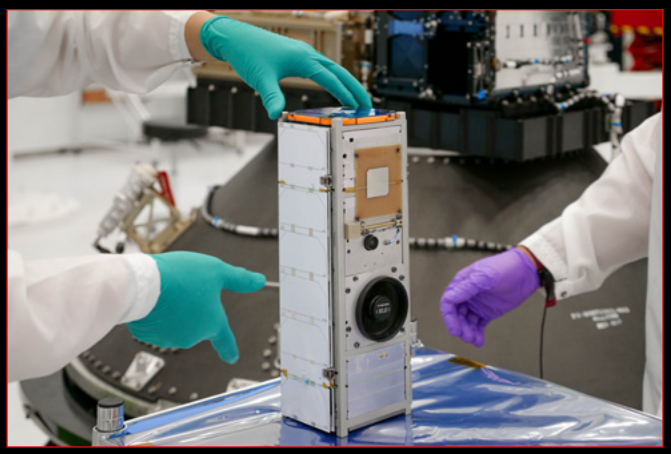
Virgin Orbit's air-launch technology is revolutionizing how we think about and conduct launches to space, offering more flexibility, agility and responsiveness than any traditional ground-based launch system. Our LauncherOne system enables easier access to space for a variety of small satellite makers and operators — including both government and commercial customers alike.

That broad appeal is exemplified in the flight manifest for this mission, which includes three different customers from three different countries:

- **The U.S. Department of Defense (DoD)** is launching four CubeSats as part of the **DoD Space Test Program's (STP) Rapid Agile Launch Initiative (RALI)**. This launch, also known as STP-27VPA, was awarded to Virgin Orbit subsidiary **VOX Space** by the DoD's **Defense Innovation Unit (DIU)**, an organization working to accelerate the adoption of commercial technology into the U.S. military in support of increased national security.
- **The Royal Netherlands Air Force (RNLAF)** is launching the Netherlands' first military satellite, a CubeSat called BRIK II, built and integrated by **Innovative Solutions in Space**. (Pictured below, top row)
- Polish satellite company **SatRevolution** is launching the first two optical satellites, STORK-4 and STORK-5 (A.K.A. MARTA), of the company's 14-satellite STORK constellation. (Pictured below, bottom row)







BEHIND THE NAME
TUBULAR BELLS: PART ONE

In 1973, Richard Branson, then a young entrepreneur and record shop owner, met a new musician who had made a demo tape unlike anything else on the airwaves. Moved by the music, Richard decided to help that musician, Mike Oldfield, get the record made. The pair played the demo for every record label they could, but no one was willing to take a chance on a record that sounded so different from the big, overproduced rock-and-roll that dominated the charts. With no one else willing to do the job, Richard decided he would simply create his own record label to help Oldfield make and release the album. And thus, Virgin Records was born. The album, *Tubular Bells*, went on to become a smash international hit, topping the charts for months, wining major awards, and going into the record books one of the top sellers of the decade.

The first track on the first side of the first album from the first band ever signed to Virgin Records. What could be more appropriate than to tip our hat to that creative work and those bold decisions?

Like *Tubular Bells*, our customers are doing something a little out of the ordinary for our space industry — and we so love their work that we've created a whole new way to launch that is tailored just for them.

MISSION EMBLEM

MISSION OVERVIEW
For Virgin Orbit's first commercial customer mission, LauncherOne will carry a total of seven CubeSats for the U.S. Department of Defense Space Test Program, Royal Netherlands Air Force, and SatRevolution.

MISSION NUMBER
This is our third mission with LauncherOne. The wings are a reference to our successful Launch Demo 2 mission, and also tie back to the U.S.' national symbol of the eagle. There are three feathers in each wing — one for each customer.

7 WHITE STARS
Each star represents one of the spacecraft flying aboard LauncherOne on this mission.

SETTING
As our launch site for this mission is the Mojave Air and Space Port in California, the backdrop includes recognizable features of the local desert landscape, such as joshua trees and rugged mountains.

SYMBOLS
A nod to our Virgin roots, the tubular bell on the bottom left is a reference to Mike Oldfield's chart-topping, smash hit album. Now a legendary cultural touchstone, *Tubular Bells* was the first record ever released under Virgin Records back in 1973. The laurel leaves on the bottom right are our good luck symbol.

LAUNCH DETAILS

TIMING

Our team is currently proceeding through the final routine items on our pre-flight checklist. We're coordinating with our stakeholders to identify the final preferred targets for launch, with an eye on **June 30th or the early days of July**. We will only proceed with the mission if all conditions for launch are nominal.

LAUNCH SITE

Mojave Air and Space Port
Mojave, California USA

KEEPING UP WITH THE ACTION

This orbital test flight will be publicly livestreamed on our website, VirginOrbit.com. We'll also live-tweet real-time updates as the mission progresses: just follow us on Twitter @VirginOrbit.

Due to capacity restrictions, we have not invited any media photographers or videographers. However, we will be documenting the entire day via our in-house media team. To access high-quality B-roll and photos captured on flight day, please reach out to press@virginorbit.com.

FLIGHT MAP

MOJAVE
COSMICGIRL TAKES-OFF

LONG BEACH

DROP POINT
LAUNCHERONE DROPS

OUR PEOPLE

WHO YOU GONNA CALL?

For more information or to set up media interviews, please reach out to Kendall Russell or submit an email to our press inbox (press@virginorbit.com).

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Communications Officer
516 640 1624
Kendall.Russell@virginorbit.com

KEY PERSONNEL

RICHARD BRANSON
Founder, Adventurer,
Serial Entrepreneur

DAN HART
Virgin Orbit President and CEO

MIKE ROKAW
Acting VOX Space President

KELLY LATIMER
Chief Test Pilot

ERIC BIPPERT
Chief Pilot

ABOUT US

VIRGIN ORBIT

Founded by entrepreneur Sir Richard Branson, Virgin Orbit is working to bust open the barriers that limit full utilization of space for all of humankind. We'll do this by making space launches more affordable, frequent and inclusive, and by enabling the thriving global community of small satellite makers.

Virgin Orbit provides reliable, responsive and flexible launches for small satellites using LauncherOne — a two-stage, expendable rocket launched from under the wing of a Boeing 747-400 called Cosmic Girl.

The satellites LauncherOne carries may be as small as a loaf of bread or as large as a home refrigerator, and on any given flight the rocket will ferry 300 kg (660 lb) or more of cargo, which could be one large satellite or dozens of smaller ones.

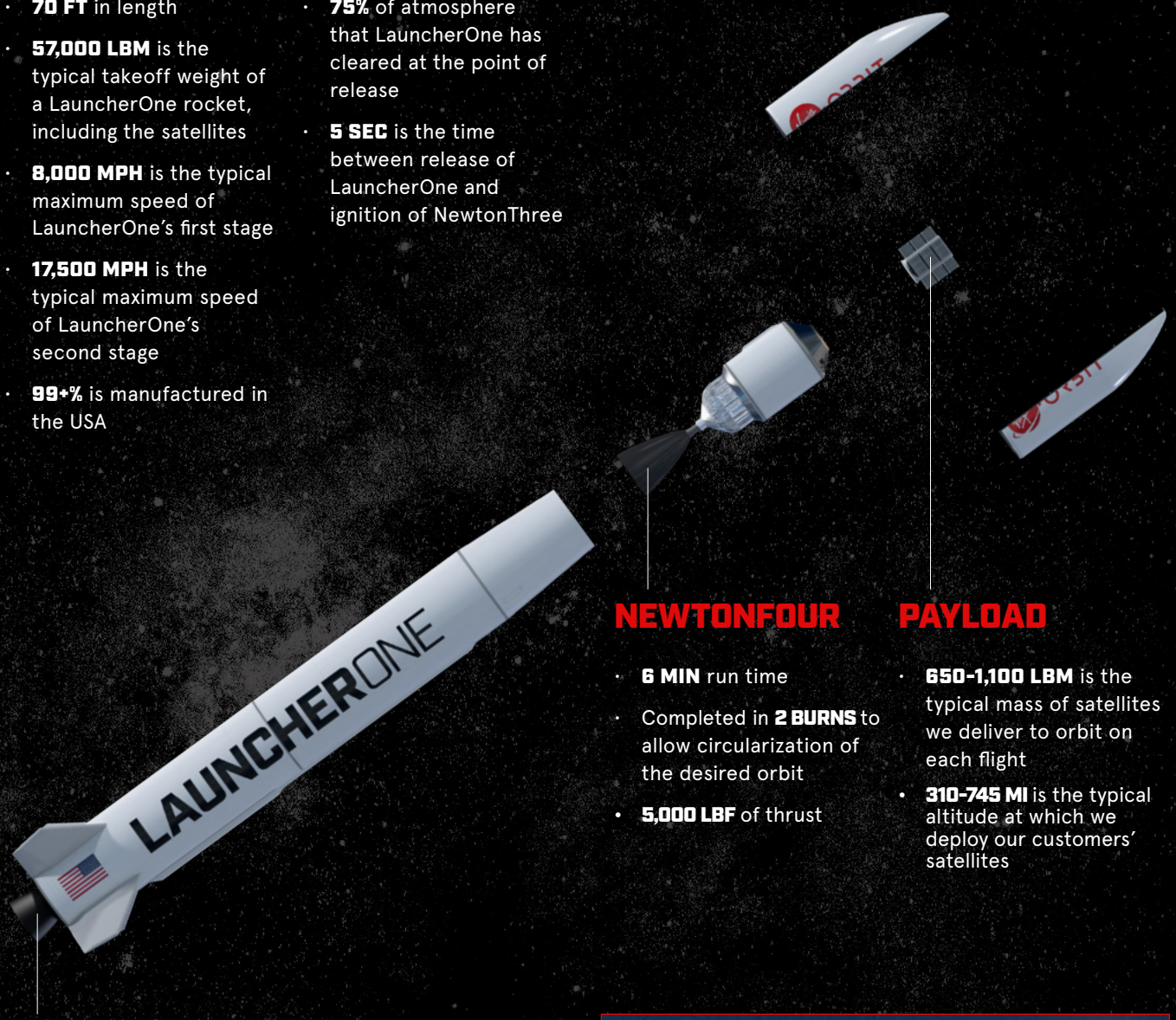
VOX SPACE

VOX Space is a US-incorporated, wholly-owned subsidiary of Virgin Orbit, which provides the national security community of the USA and allied nations with responsive, dedicated, and affordable launch services for small satellites bound for Low Earth Orbit. Headquartered in El Segundo, California, VOX Space can provide study, analysis, integration, and launch services using Virgin Orbit's LauncherOne, while ensuring customers' critical information is protected.

THE LAUNCHERONE ROCKET

LAUNCHERONE

- **70 FT** in length
- **57,000 LBM** is the typical takeoff weight of a LauncherOne rocket, including the satellites
- **8,000 MPH** is the typical maximum speed of LauncherOne's first stage
- **17,500 MPH** is the typical maximum speed of LauncherOne's second stage
- **99+%** is manufactured in the USA
- **75%** of atmosphere that LauncherOne has cleared at the point of release
- **5 SEC** is the time between release of LauncherOne and ignition of NewtonThree



NEWTONTHREE

- **3 MIN** run time
- **75,000 LBF** vacuum-equivalent thrust

NEWTONFOUR

- **6 MIN** run time
- Completed in **2 BURNS** to allow circularization of the desired orbit
- **5,000 LBF** of thrust

PAYLOAD

- **650-1,100 LBM** is the typical mass of satellites we deliver to orbit on each flight
- **310-745 MI** is the typical altitude at which we deploy our customers' satellites

TERMS TO KNOW

- **Cosmic Girl:** Virgin Orbit's 747-400 carrier aircraft, procured from the fleet of Virgin Atlantic
- **Ground support equipment (GSE):** The set of mobile trailers Virgin Orbit uses for ground operations before takeoff, including propellant loading
- **Hammerhead:** The staging area on the runway where Virgin Orbit sets up our mobile ground support equipment
- **Low Earth Orbit (LEO):** The region between 400 and 1,000 miles above Earth
- **LOX:** Liquid oxygen, which we use as the oxidizer for LauncherOne
- **Payload:** What is being sent into orbit, generally a satellite
- **Pylon:** The structural mechanism that hooks LauncherOne to Cosmic Girl's wing
- **Rapid Agile Launch Initiative (RALI):** The Space Test Program (STP) Rapid Agile Launch Initiative (RALI) is a project initiated in response to Congressional guidance to procure prototype commercial small launch capabilities rapidly. By using the Other Transaction Authority (OTA) competitive process, STP was able to award contracts for small launch services to non-traditional companies. The intent of RALI is to provide prototype commercial small launch services capable of taking research and development payloads into Low Earth Orbit (LEO).
- **RP-1:** Rocket Propellant-1 — a highly refined form of kerosene which we use as the fuel for LauncherOne
- **Small satellites:** Satellites of low mass and size, usually less than 1,100 lb

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