



# ON CLOSER INSPECTION

PRESS KIT | LAUNCHING FEBRUARY 2024

Rocket Lab USA, Inc.  
[rocketlabusa.com](https://rocketlabusa.com)



# LAUNCH INFORMATION



## LAUNCH SITE

Launch Complex 1 – Pad B  
Mahia, New Zealand.



## LAUNCH WINDOW

Opens February 19th NZDT and extends for up to 14 days.

Time Zone	Window Open
NZDT	03:52
UTC	14:52
EST	09:52
PST	06:52



## ORBIT

# 600km

Apogee



## SATELLITES

# 1

ADRAS-J



## INCLINATION

# 98

Degrees



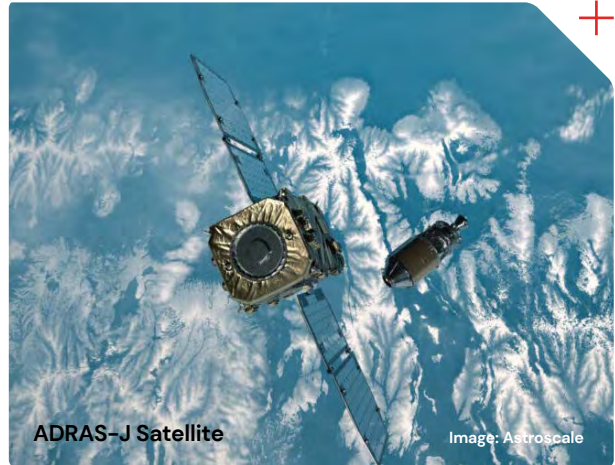
## CUSTOMER

# Astroscale

# MISSION OVERVIEW

About 'On Closer Inspection'

We're launching an advanced satellite that will approach and monitor a piece of space junk (also known as orbital debris) to assess the possibility of servicing or de-orbiting the debris in future.



The 'On Closer Inspection' mission is scheduled to launch from Pad B at Launch Complex 1 in Mahia, New Zealand, and will carry a single satellite for Astroscale.

Space is becoming a crowded place. Since the launch of the first satellite in 1957, the creation of debris in Earth's orbits has been steadily increasing. Much of this debris is comprised of spent rocket stages and satellites that have reached the end of their lifespan. Astroscale is developing solutions across the spectrum of on-orbit servicing.

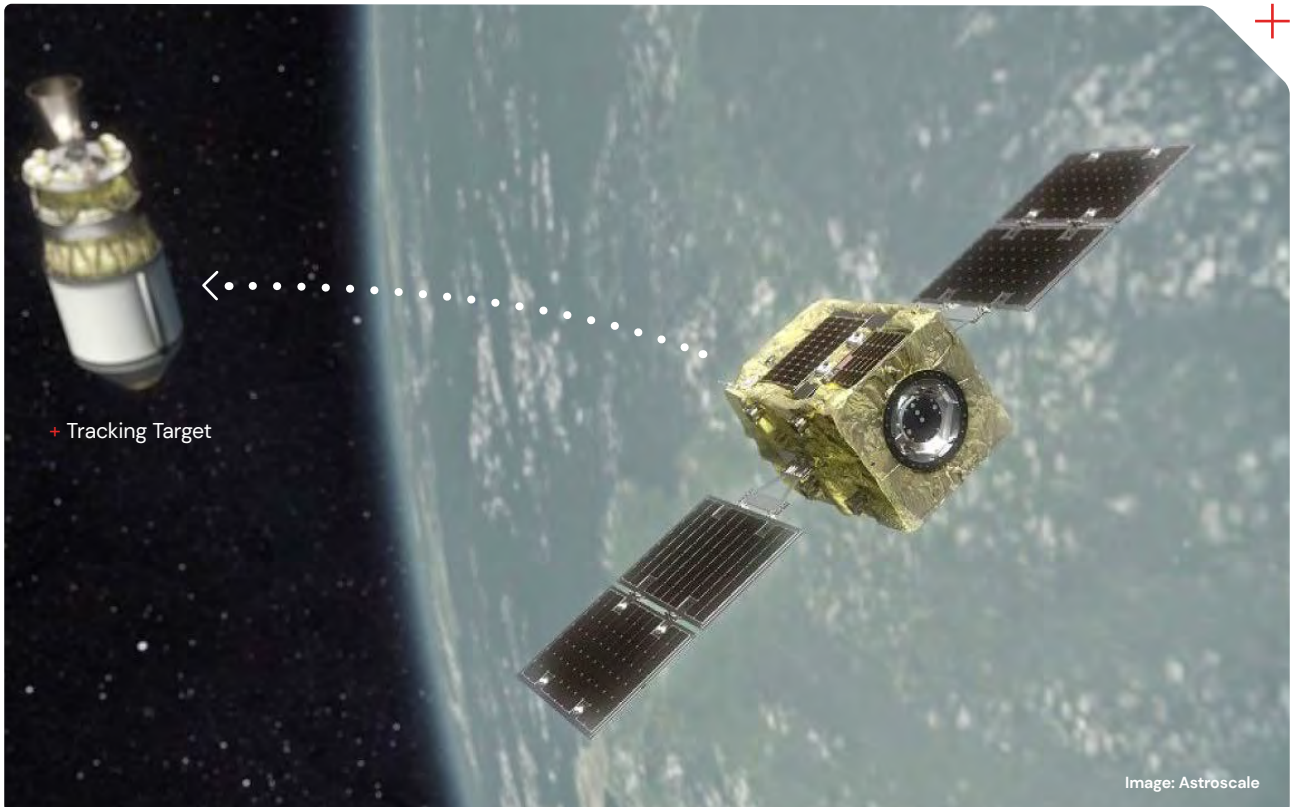
However, before space debris can be removed, it must first be safely approached and characterized. What condition is it in? Is it tumbling, and if so, how quickly? ADRAS-J, or Active Debris Removal by Astroscale-Japan, aims to answer these questions and offer unprecedented insight on the behavior of debris objects in space.

ADRAS-J will be the world's first attempt to safely approach and characterize an existing piece of large debris through Rendezvous and Proximity Operations (RPO), opening up a range of on-orbit servicing possibilities, including active debris removal. With ADRAS-J, Astroscale is partnering with the Japan Aerospace Exploration Agency (JAXA) on its Commercial Removal of Debris Demonstration (CRD2) program. As one of the world's first demonstrations of removing large-scale debris from orbit, CRD2 will pave the way in developing the technology and policies that will drive the sustainable space market.

The mission will be Rocket Lab's second mission of 2024 and Rocket Lab's 44th Electron launch overall.

# MISSION PROFILE

About 'On Closer Inspection'



**TRACKING TARGET:** H-IIA  
(spent rocket stage)

**COUNTRY OF ORIGIN:** Japan

**LAUNCHED:** January 2009

**DIMENSIONS:** 11m x 4m / 3 tons

**ALTITUDE:** Approx. 600km

The tracking target that ADRAS-J will monitor is the H-IIA spent rocket stage. It does not provide any GPS data on its own, meaning the precise location and orbital position needed for an RPO mission is not available. Once deployed to a precise orbit, ADRAS-J will use ground based observation data of the stage's approximate orbital position to initially approach it from a safe distance based on this limited information.

Once the ADRAS-J is within a certain distance from H-IIA, ADRAS-J will use its own on-board rendezvous payload sensors to conduct a safe approach with the target. These sensors will capture various types of relative navigation information about the H-IIA, such as distance and attitude, needed to demonstrate RPO technologies to safely approach. Seamless switching and coordination between these sensors is crucial to the success of the mission. Switching between the sensors can be likened to transitioning between a telescope, binoculars, and a magnifying glass while in a fast-moving vehicle on Earth which illustrates the difficult challenges that need to be overcome for this type of mission. For this mission, ADRAS-J will conduct a close approach and orbit around the target to gather data and images to assess the stage's condition such as: spin rate, spin axis, and condition of the structure. The mission will demonstrate the most challenging RPO technologies necessary for on-orbit services, however ADRAS-J will not dock with the target stage.

# LAUNCH SITE OVERVIEW

**Rocket Lab Launch Complex-1**  
Mahia, New Zealand



'On Closer Inspection' will lift off from Launch Complex 1, Pad B on New Zealand's Mahia Peninsula.

An FAA-licensed spaceport, Launch Complex 1 can provide up to 120 launch opportunities every year. From the site it is possible to reach orbital inclinations from sun-synchronous through to 30 degrees, enabling a wide spectrum of inclinations to service the majority of the satellite industry's missions to low Earth orbit.



Located within Launch Complex 1 are Rocket Lab's private range control facilities, two 100K satellite cleanrooms, a launch vehicle assembly facility which can process multiple Electrons at once, and administrative offices.

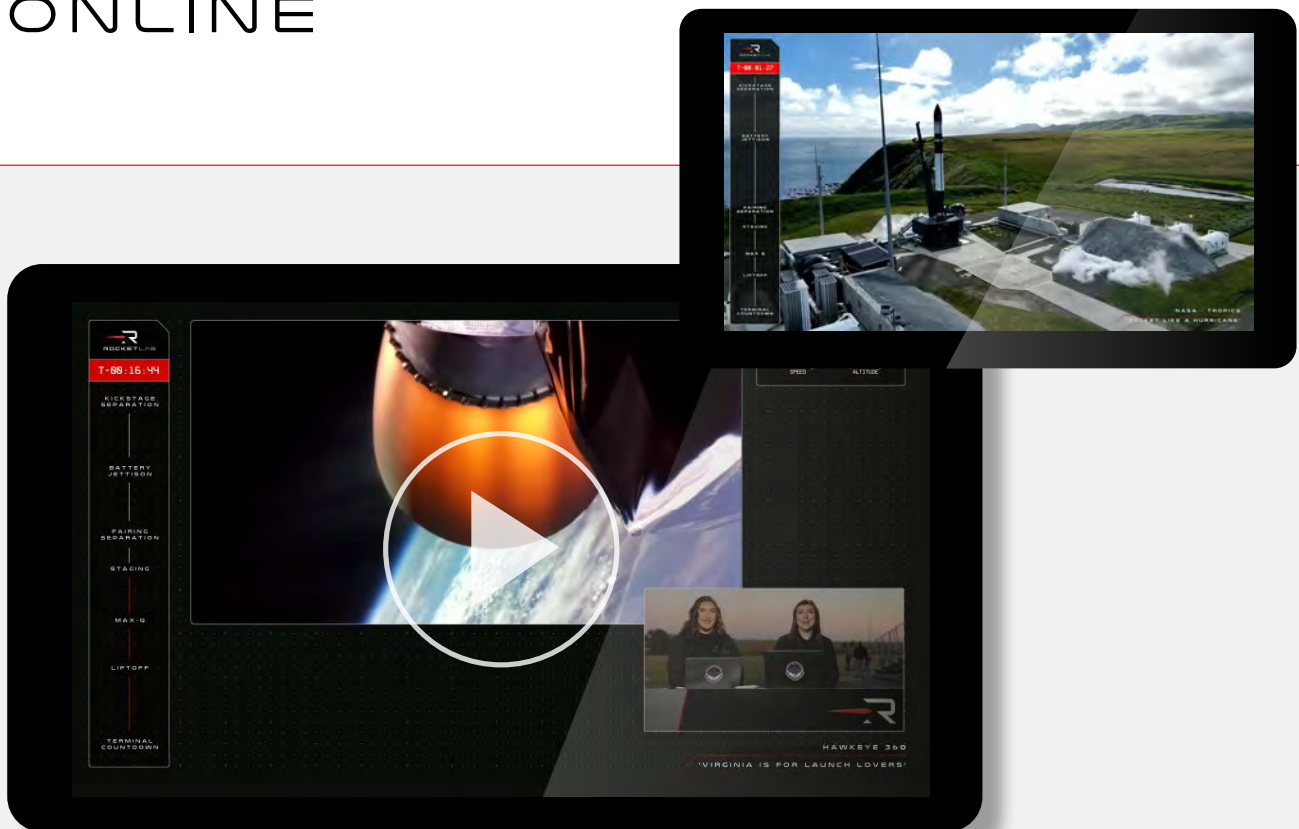
Operating a private orbital launch site alongside its own range and mission control centres allows Rocket Lab to reduce the overhead costs per mission, resulting in a cost-effective launch service for satellite operators.

In addition to Launch Complex 1, Rocket Lab operates an additional launch site, Launch Complex 2, at the Mid-Atlantic Regional Spaceport within NASA's Wallops Flight Facility on Virginia's Eastern Shore. Launch Complex 2 can support up to 12 missions per year.

By operating two launch complexes in two hemispheres, Rocket Lab provides customers with flexible, responsive launch opportunities.



# VIEWING A LAUNCH ONLINE



## LIVE STREAM

The live stream is viewable at:

[rocketlabusa.com/  
live-stream](https://rocketlabusa.com/live-stream)

## LAUNCH FOOTAGE & IMAGES

Images and footage of "On Closer Inspection" launch will be available shortly after a successful mission at:

[www.flickr.com/photos/rocketlab](https://www.flickr.com/photos/rocketlab)

## UPDATES

For information on launch day visit:

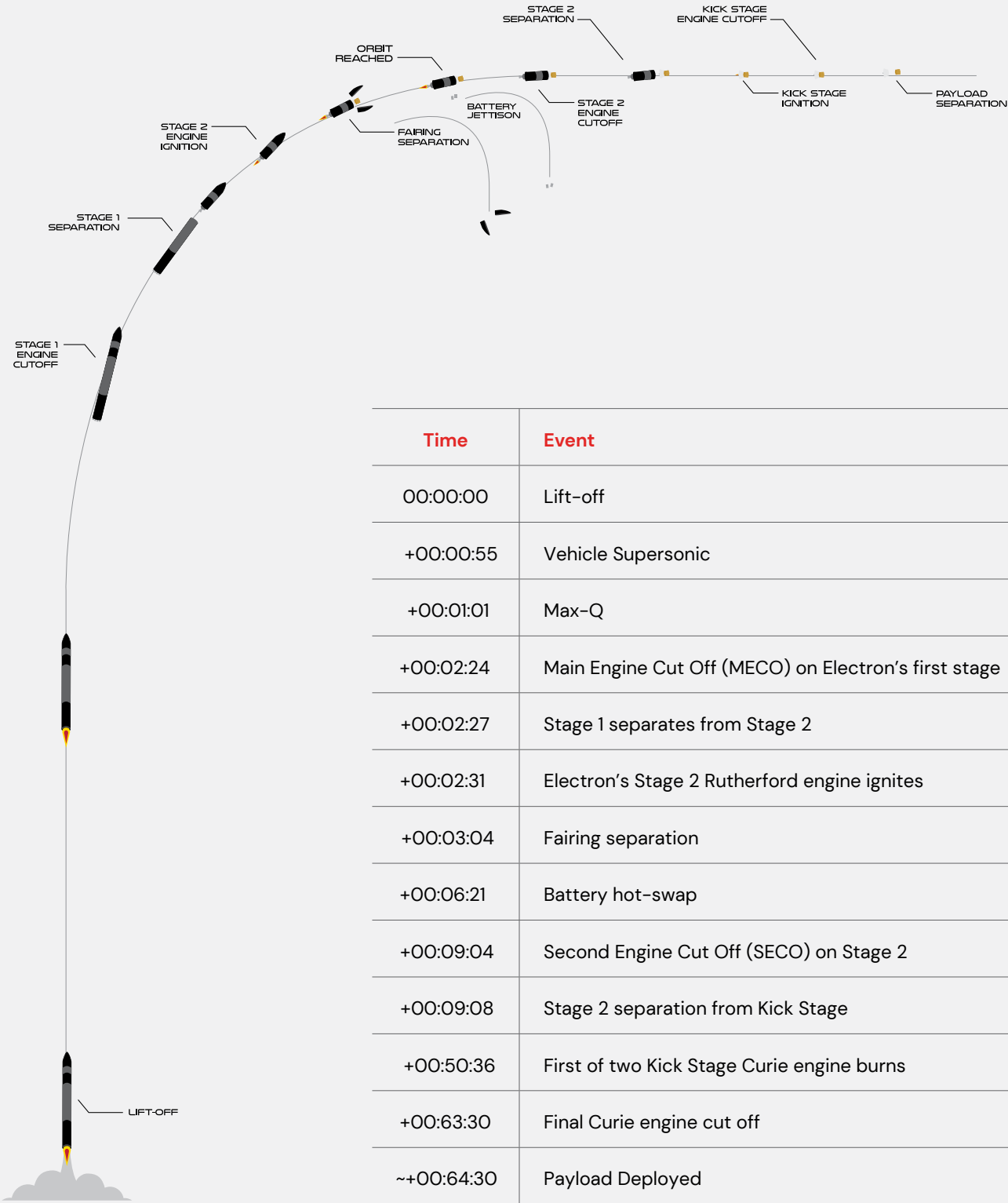
[rocketlabusa.com/next-mission](https://rocketlabusa.com/next-mission)

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# TIMELINE OF LAUNCH EVENTS



# ELECTRON LAUNCH VEHICLE

## OVERALL

### LENGTH

18m

### DIAMETER (MAX)

1.2m

### STAGES

2 + Kick Stage

### VEHICLE MASS (LIFT-OFF)

13,000kg

### MATERIAL/STRUCTURE

Carbon Fiber Composite/Monocoque

### PROPELLANT

LOX/Kerosene

## PAYLOAD

### NOMINAL PAYLOAD

320kg / 440lbm To 500km

### FAIRING DIAMETER

1.2m

### FAIRING HEIGHT

2.5m

### FAIRING SEP SYSTEM

Pneumatic Unlocking, Springs

## STAGE 2

### PROPULSION

1x Rutherford Vacuum Engine

### THRUST

5800 LBF Vacuum

### ISP

343 Sec

## INTERSTAGE

### SEPARATION SYSTEM

Pneumatic Pusher

## STAGE 1

### PROPULSION

9x Rutherford Sea Level Engines

### THRUST

5600 LBF Sea Level (Per Engine)

### ISP

311 Sec





# MISSION PATCH ANATOMY

'On Closer Inspection'

This patch was designed with a strong focus on the core characteristics of the unique mission – deploying a spacecraft on a pathway to monitor a specific piece of orbital debris.

Star #1– representing the piece of debris being investigated.

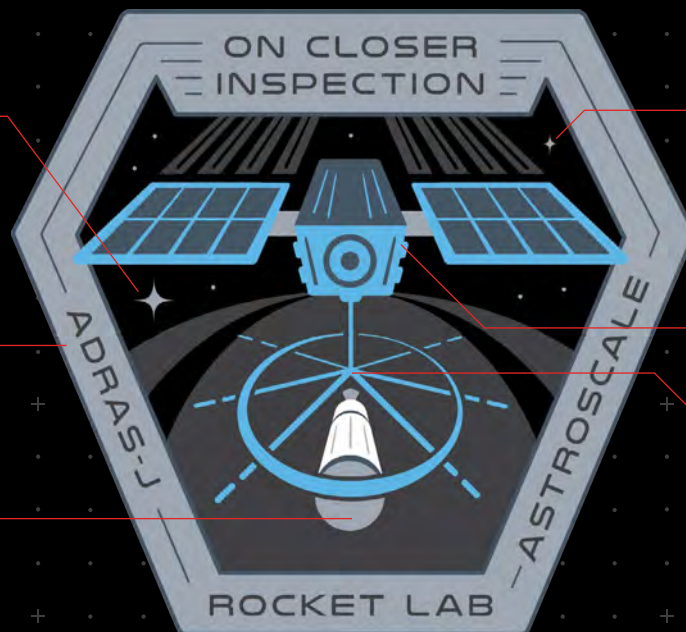
Star #2 – representing the payload.

ADRAS-J (Active Debris Removal by Astroscale-Japan).

The ADRAS-J Spacecraft.


Tracking Target H-IIA (spent rocket stage)


Signal rays from the spacecraft tracking data and taking imagery of the orbital debris.




Mission merchandise, including this mission patch, can be found online at: [rocketlabusa.com/shop](https://rocketlabusa.com/shop)


## CONTACT US


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