ROCKET LAB USA 2019

AS THE CROW FLIES PRESS KIT OCTOBER 2019

LAUNCHING ON ELECTRON VEHICLE NINE: **'AS THE CROW FLIES'**

ROCKET LAB

ROCKET LAB PRESS KIT
'AS THE CROW FLIES' 2019

LAUNCH INFORMATION

LAUNCH WINDOW
15 OCTOBER – 28 OCTOBER 2019 NZDT
(14 OCTOBER – 28 OCTOBER 2019 UTC)

LAUNCH SITE
LAUNCH COMPLEX 1
MAHIA PENINSULA, NZ

Launch Timing: **A launch window will be open for four hours each day from 12:00 - 16:00 NZDT. (23:00 - 03:00 UTC).**

Watch the live launch webcast: www.rocketlabusa.com/live-stream.

For information on launch day visit **www.rocketlabusa.com/missions/next-mission/** and follow Rocket Lab on Twitter **@RocketLab**.

AS THE CROW FLIES AHEAD OF PAYLOAD INTEGRATION AT LC-1 | August 2019

LIFT OFF OF THE LOOK MA, NO HANDS MISSION | August 2019

MISSION OVERVIEW

Rocket Lab's ninth mission will deploy a single microsat for satellite manufacturer and operator Astro Digital. The mission will lift-off Rocket Lab Launch Complex 1 on New Zealand's Māhia Peninsula.

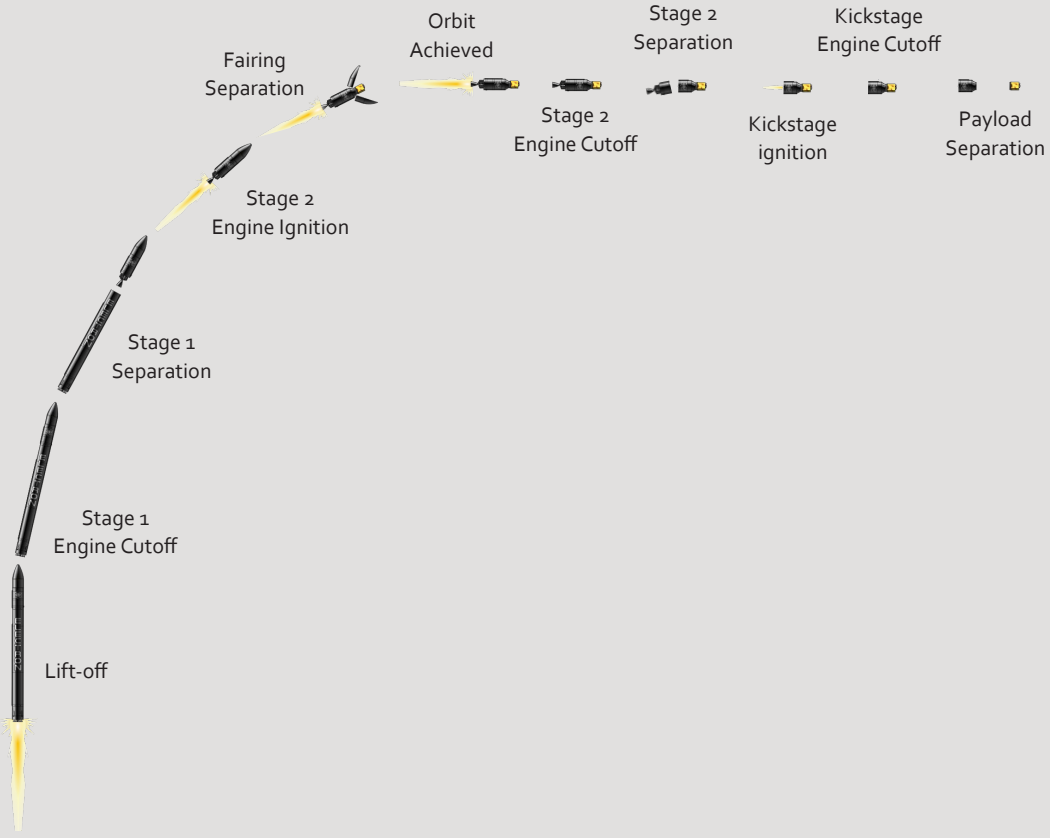
The payload on board is a Palisade technology demonstration satellite, a 16U CubeSat bus with on-board propulsion system, a next generation Astro Digital developed communications system, and software developed by Advanced Solutions Inc. including an advanced version of ASI's MAX Flight Software.

The orbital parameters for this mission will see Electron's Kick Stage deploy the payload to more than twice the altitude reached by any Rocket Lab mission to date.

The mission is named 'As The Crow Flies' in a nod to Astro Digital's Corvus Platform, which provides flexible and cost-effective solutions across a wide range of applications and mission profiles on bus variants ranging from 6U and 16U CubeSats to ESPA Class. Corvus is also a widely-distributed genus of birds which includes crows.

TIMELINE OF EVENTS

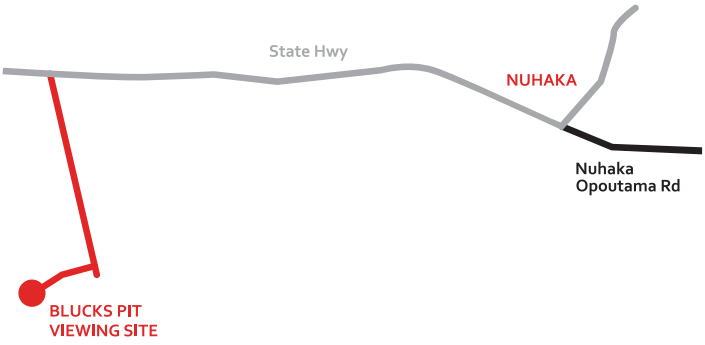
HOURS:MINUTES:SECONDS FROM LIFT-OFF	EVENT
-06:00:00	Road to the launch site closed
-04:00:00	Electron lifted to vertical position and filled with fuel
-02:30:00	Launch pad personnel exit area in preparation for launch
-02:00:00	Electron filled with liquid oxygen (LOx)
-02:00:00	Safety zones are activated for designated marine space
-00:30:00	Safety zones are activated for designated airspace
-00:18:00	The Launch Director conducts a go/no-go poll of launch operators to confirm Electron is ready for launch
-00:02:00	Autosequence commences and Electron's on-board computers initiate the launch sequence
-00:00:02	Ignition of the nine Rutherford engines powering Electron's first stage
00:00:00	Lift-off
+00:02:35	Main engines (Stage 1) cut off
+00:02:39	Stage 1 of Electron separates
+00:02:42	The vacuum Rutherford engine on Stage 2 ignites
+00:03:03	The Electron's fairing separates
+00:06:47	Battery hot-swap is performed
+00:09:08	Electron reaches orbit
+00:09:14	Stage 2 engine cuts off
+00:09:18	Stage 2 of Electron separates
+01:08:33	Kick Stage ignites
+01:10:36	Curie engine powering Kick Stage cuts off
+01:11:22	Payloads separated from launch vehicle



VIEWING A LAUNCH

VIEWING IN PERSON

Wairoa District Council has allocated a rocket launch viewing area for the public near Nuhaka, accessible via Blucks Pit Road. Visit www.visitwairoa.co.nz/welcome-to-wairoa/space-coast-new-zealand/ for more information. Scrubs and postponements are likely during launch windows, so visitors to the Blucks Pit viewing site should anticipate multiple postponements, sometimes across several days.



LC-1 LAUNCH VIEWING AREA | Blucks Pit Road, near Nuhaka

LAUNCH VIEWING AREAS DISTANCE FROM ROCKET LAB LC-1

As Rocket Lab's top priority during the test launch is public safety, there are safety zones in place during a launch and no access will be permitted to Onenui Station where Launch Complex 1 is located.

LIVESTREAM

The best way to view a launch is via Rocket Lab's live video webcast. This offers the best views of launch and includes helpful commentary about the launch process. A livestream will be made available approximately 15 - 20 minutes prior to a launch attempt. Rocket Lab will post links to the webcast when live via Facebook and Twitter. The livestream is viewable at www.rocketlabusa.com/live-stream and Rocket Lab's YouTube channel.

ROCKET LAB'S LIVESTREAM OF 'MAKE IT RAIN' MISSION | June, 2019

LAUNCH FOOTAGE AND IMAGES

Images and video footage of the 'Make it Rain' launch will be available shortly after a successful mission at www.rocketlabusa.com/news/updates/link-to-rocket-lab-imagery-and-video

Images and footage of previous Rocket Lab launches can also be found at that link.

SOCIAL MEDIA

For real time updates on the launch follow the Rocket Lab Twitter page @RocketLab

@RocketLabUSA @RocketLab

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THE FUTURE OF SUSTAINABLE SPACE

RESPONSIBLE ORBITAL DEPLOYMENT IS HERE

The small satellite industry is experiencing incredible growth, with more spacecraft operators than ever before demanding frequent access to space. Large constellations are already taking shape on orbit, with many more planned. With the influx of traffic in low Earth orbit comes the responsibility of small satellite operators and launch providers alike to ensure space remains safe and accessible for the benefit of all on Earth.

Rocket Lab plans to launch more frequently than any other launch provider in history, so we're carefully considering our role in the solution for the sustainable use of space and the reduction of debris in orbit.

Traditional launch methods leave large rocket stages on orbit for years and often provide limited control over where a small satellite is deployed, adding unnecessary risk for all satellites.

We know there's a better way.

THE KICK STAGE

Rocket Lab's Kick Stage enables a sustainable small satellite launch system and a safer LEO for all.

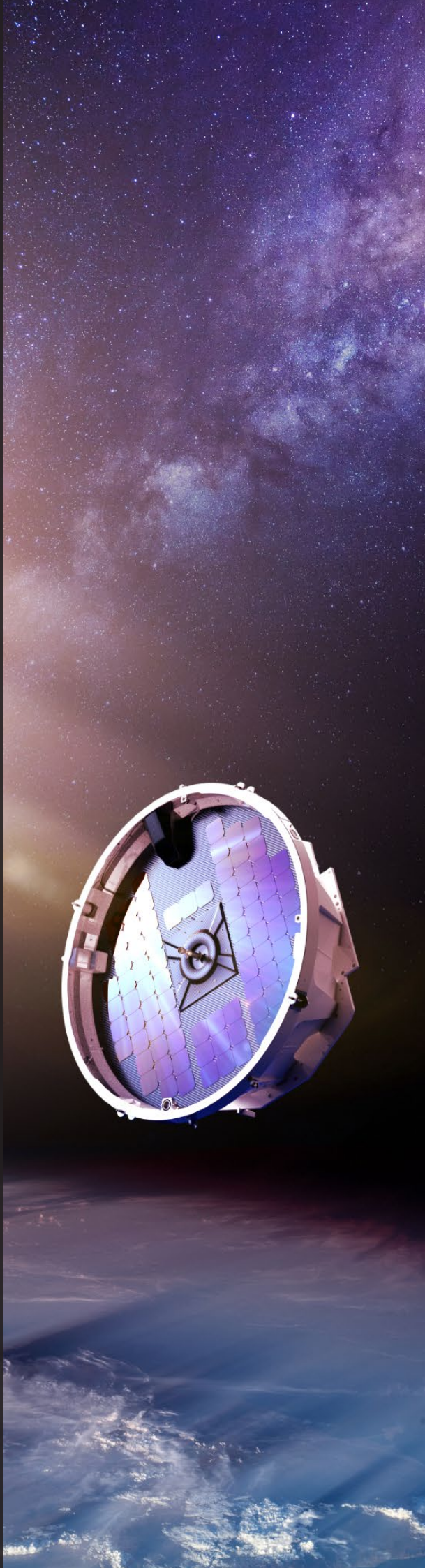
After Electron's second stage reaches an elliptical orbit, the Kick Stage separates and is used to circularize the payload's orbit. This sees the payload travel around the Earth in a circle, so the satellite is always the same distance from the planet - the ideal position for communications and imaging satellites.

The Kick Stage is capable of delivering multiple payloads to a range of different orbits on the same mission. Thanks to the Curie engine's ability to reignite in space, the Kick Stage can move to different orbits to deploy multiple satellites to different, precise locations. A cold gas reaction control system supports this further for precision pointing on deployment.

This puts satellites in their perfect orbit, making it easier for operators and regulators to identify and catalogue them.

Once the payloads are deployed, the Kick Stage can perform a deorbit maneuver to lower its orbit, causing it to renter the Earth's atmosphere and burn up faster.

This leaves no part of Electron in orbit once payloads are deployed – the way we think it should be.



RESPONSIVE SPACE ACCESS WITH ROCKET LAB

LAUNCH ON DEMAND – WE'RE READY WHEN YOU ARE.

Responsive launch is the key to resilience in space. All satellites are vulnerable, be it from natural, accidental, or deliberate actions. The ability to deploy new satellites to precise orbits in a matter of hours, not months or years, is critical to government and commercial satellite operators alike.

It means uninterrupted weather monitoring, communications, navigation, early warning, and security systems - serving billions of people every day.

TRULY RESPONSIVE SPACE ACCESS REQUIRES THREE THINGS

1 RESPONSIVE LAUNCH VEHICLES

Electron is designed for standardized, rapid production. An entirely new Electron is currently built from scratch every 30 days. This high production rate ensures there are always launch vehicles on standby, ready to be assigned a payload for launch on demand.

2 RESPONSIVE LAUNCH SITES

Rocket Lab delivers the highest number of launch opportunities globally - more than 130 each year.

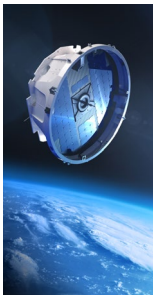
Rocket Lab's Launch Complex 1 in New Zealand can support up to 120 launches per year, offering unmatched launch schedule flexibility.

Launch Complex 2 on Wallops Island, Virginia, is tailored specifically for government missions and can support up to 12 launches per year.

3 RESPONSIVE SATELLITES

Rocket Lab's Electron launch vehicle is a standardized design, created to suit a range of satellites and missions, from a CubeSat rideshare to a single microsat. By not building to tail numbers, Rocket Lab provides unrivaled flexibility for on-demand launch. Satellites are integrated onto the stand-alone payload plate which can then be mounted to any Electron vehicle, enabling rapid and responsive launch opportunities.

Rocket Lab goes one step further with the creation of the common Photon satellite bus. Small satellite operators simply provide their sensor and Rocket Lab looks after satellite build, launch and ground segments. Photon removes the need for operators to build their own spacecraft and is an end-to-end solution for increasing flexibility for quick-reaction launches, without sacrificing reliability.



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