



Abstract for Regional Report at the 7th UNISEC–Global Meeting

Jim Hefkey
New Zealand

History of Local Chapter Activities



POC Established in 2016

- *Jim Hefkey participated in CLTP6 in 2015*
- *Organized local MIC style competition UoA 2016, 2017, 2018, 2019*
- *Attended 5th UNISEC-Global Meeting in 2017*
- *Visited by Simonetta Di Pippo – invited to present our undergrad programme at UN-BSTI, Stellenbosch 2017*
- *Created local ARLISS style launch (P-Sat) 2018, 2019 (1 Km altitude)*
- *Now have three 1U CubeSat Project*

UNISEC-Global Activities in 2019



**Number of

- Space Active Universities (not yet chapter): Three - Auckland, Canterbury, Victoria
- Students: Auckland ~300, Canterbury ~30, Victoria ~?
- Professors: Auckland 7, Canterbury 4, Victoria ?
- Others: NZ Space Agency aware of UNISEC-Global



The locations of the main campus of each university

Aerospace is NOT taught as a degree course by ANY University in New Zealand

Activities in 2019



Visit to New Zealand from Tokyo University
to establish research links with NZ Universities and Industry

Hosted by New Zealand Space Agency



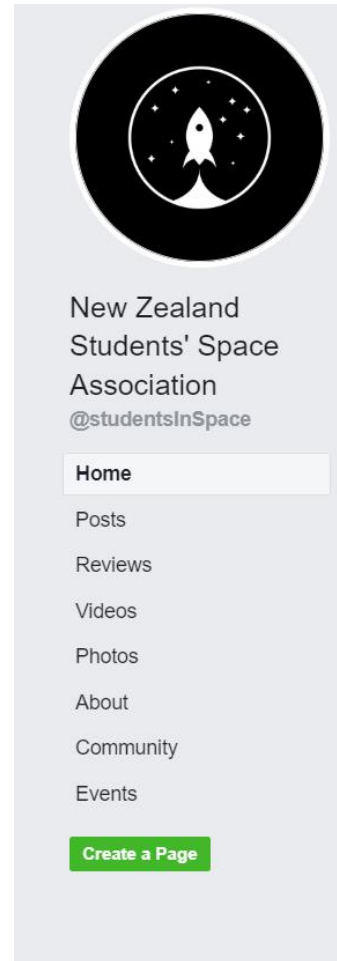
Professor
Shinichi Nakasuka

Activities in 2019



Victoria University of Wellington

*Student Club trying to connect
tertiary students interested in
space from around the country.*



The image shows the top portion of a Facebook profile page for the 'New Zealand Students' Space Association'. It features a circular profile picture with a white rocket launching into space against a black background with stars. Below the picture, the page name 'New Zealand Students' Space Association' and the handle '@studentsInSpace' are displayed. A navigation menu on the left includes 'Home', 'Posts', 'Reviews', 'Videos', 'Photos', 'About', 'Community', and 'Events'. A green 'Create a Page' button is located at the bottom of the menu.

Like Follow Share ...

Posts

 **New Zealand Students' Space Association** 21 hrs · 🌐

Ticket to NASA! Attention all STEM postgrads: Internships to NASA and NZ Space Agency Scholarships are now open, closing 19 December. Apply via www.mbie.govt.nz/nasa



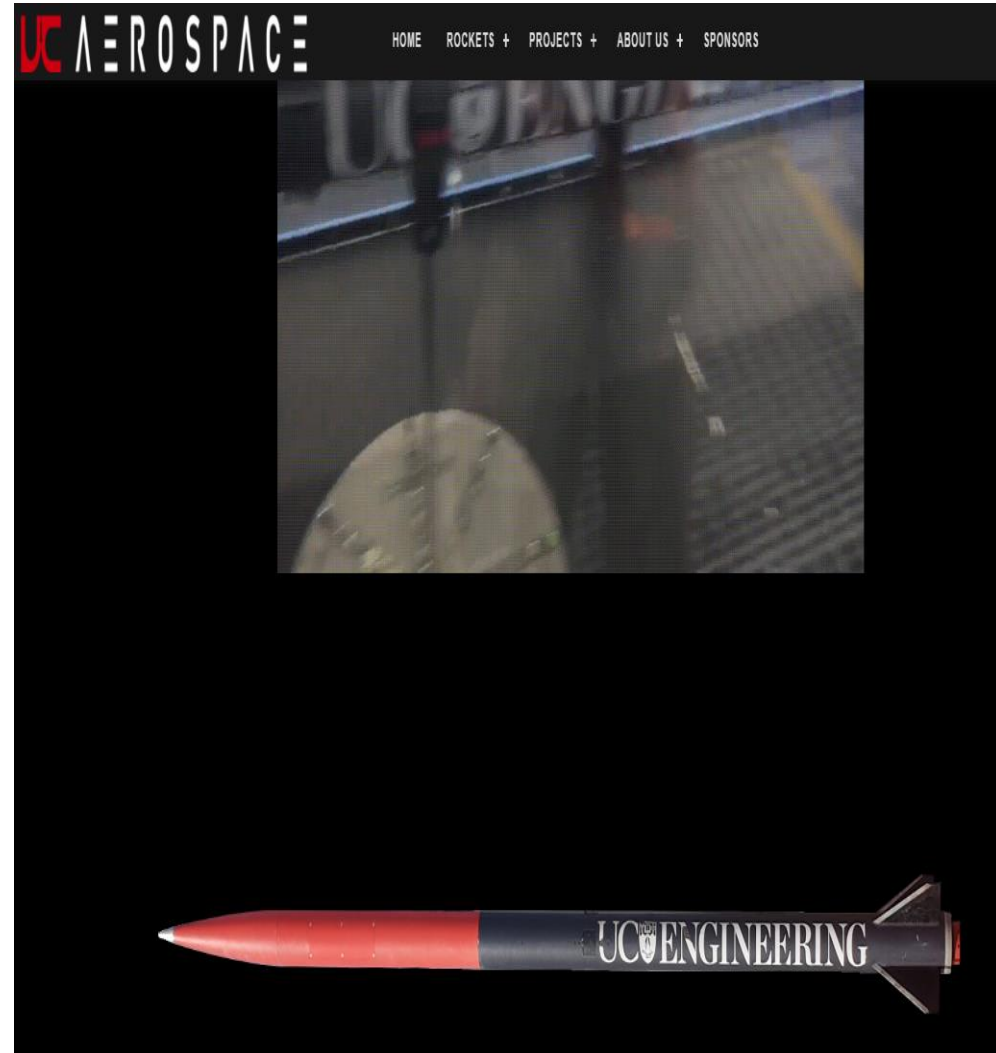
The image is a promotional graphic with a dark blue space background. On the left, a stylized Earth is shown in blue and white. A satellite is depicted in orbit. A large yellow circle on the right contains the text: 'NEW ZEALAND SPACE AGENCY', 'The sky is no limit!', 'NASA Internships and New Zealand Space Agency Scholarships', 'Applications now open until 19 December', and 'Apply today at mbie.govt.nz/nasa'. At the bottom, logos for the Ministry of Business, Innovation & Employment and the New Zealand Government are visible.

Activities in 2019



Canterbury University in Christchurch

- *Undergraduate engineering student team developing small solid propellant rocket to reach Karman line.*
- *Professors researching in guidance and control systems.*
- *Professors researching in space biological systems*
- *Research partnerships with UoA*



Activities in 2019



The University of Auckland

- *Auckland Programme for Space Systems*
 - *Undergraduate not-for-credit CubeSat competition*
- *Business start-up companies*
 - *Participants from APSS*
- *Auckland Space Institute*
 - *New organisation for research*



Activities in 2019



- *Auckland Programme for Space Systems*
 - *Mission Competition open to undergraduates from ALL disciplines*



Activities in 2019



- *APSS - Now into 3rd cycle – supposed to be 2 years each*



APSS-1 2017
QuakeTec

APSS-2 2018
Kessler

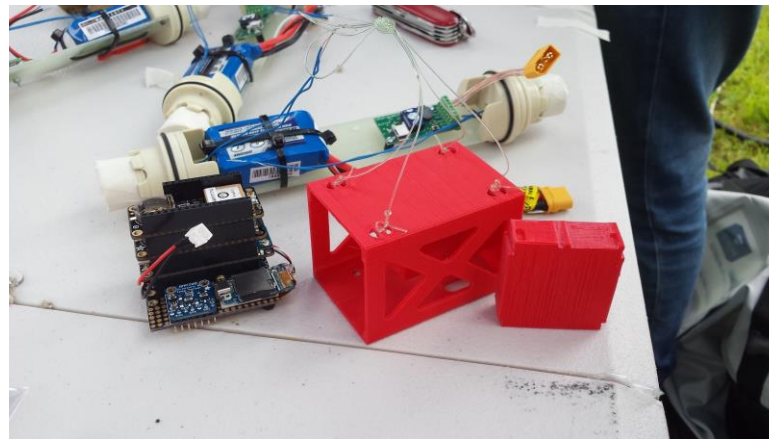
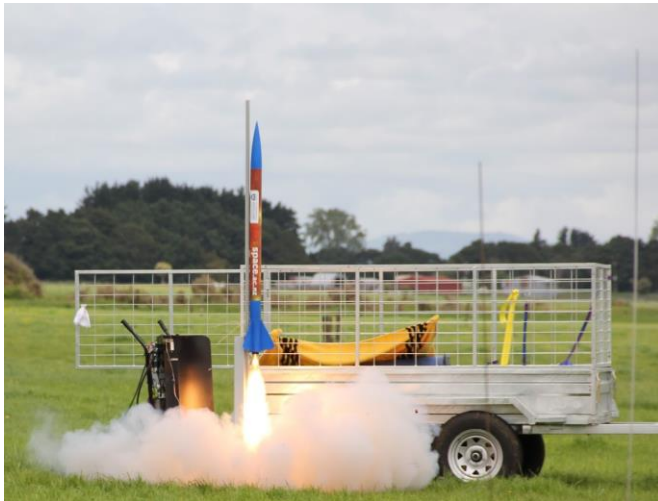
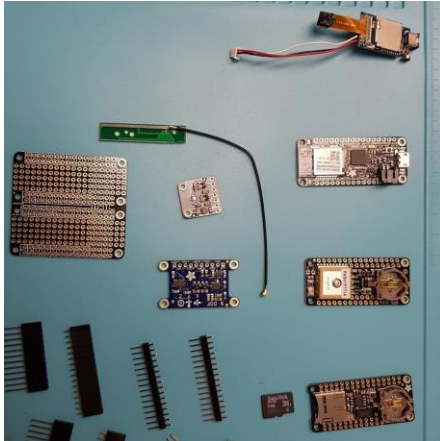


APSS-3 2019
Koios

Activities in 2019



P-Sat Challenge



Activities in 2019



Auckland Programme for Space Systems

- *Student Alumni Business Start-ups*

Luxor Astronautics



ZENNO Astronautics

Activities in 2019



The Auckland Space Institute

Centre for Research

Active PhD research programme has already attracted several million \$ of research funding:

- SAR
- Communication
- Electric Propulsion
- Sample Return
- etc

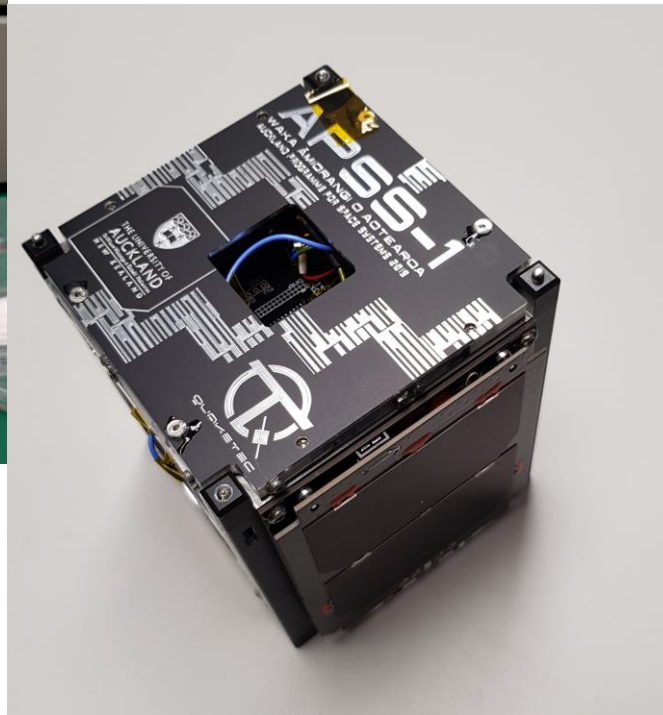
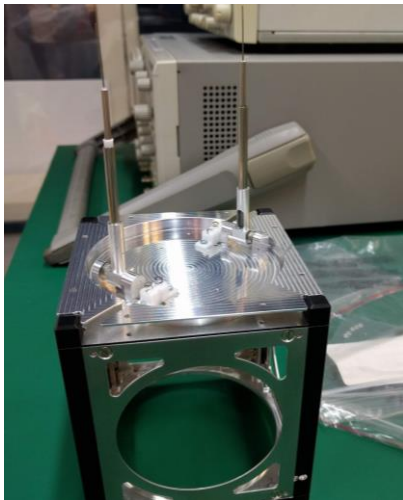




Plan for 2020 and beyond

Launch of 1st New Zealand Satellite

- Manifested January 2020 with Rocket Lab





Plan for 2020 and beyond

- *Flight Qualify APSS-2 CubeSat*
- *Prototype APSS-3 CubeSat*
- *Run APSS-4 Competition*

- *Establish Research Lab for ASI*
 - *Flight Qualification lab, Prof G Aglietti*

- *Establish Mission Control Centre for Satellite Ops*
 - *Funding in place for Methane Sat, Prof Delwyn Moller ex NASA JPL*





Thank You

