

# Quetzal-1

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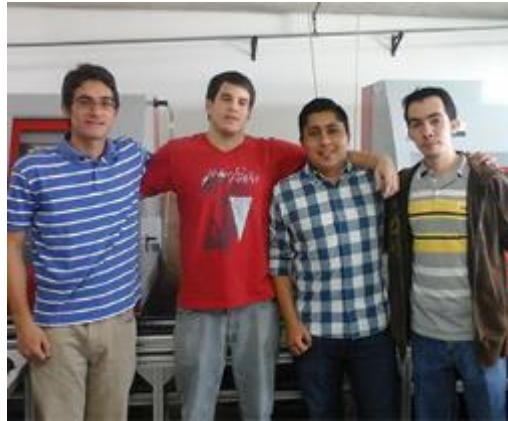
# About the Project

- 1U CubeSat developed by Universidad del Valle de Guatemala (UVG) selected as the winner of the second round of the KiboCUBE programme in 2017.
- Mission: To design, develop and operate a CubeSat-class satellite to **test a multispectral sensor prototype**, opening the field of **space science & technology in Guatemala**, **developing the country's human capital**, and enabling the independent acquisition of remote sensing data for natural resource management.



# The Team

~100 persons (undergraduate students, faculty, alumni, external advisors)



Phase 1: 2014



Phase 2: 2014-2015



Phase 3: 2015-2016



Phase 4: 2016-2017



Phase 5: 2017-2018

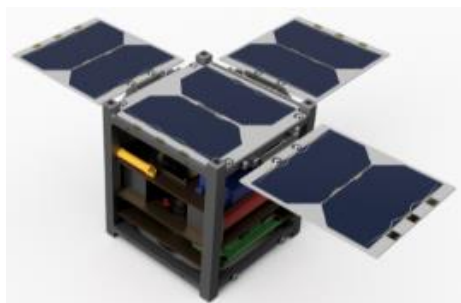


Phase 6: 2019

# Design Iterations



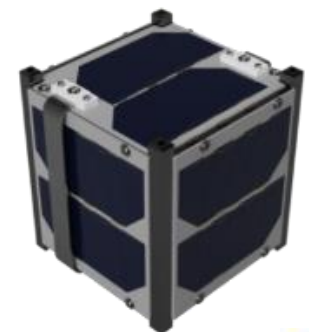
**2014**



**2015**



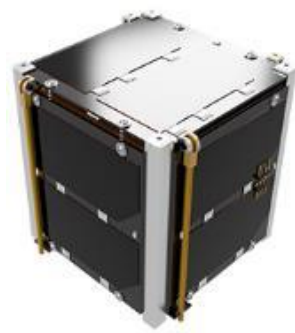
**2016**



**2017**



Winner of the second round of the KiboCUBE programme



**2018**



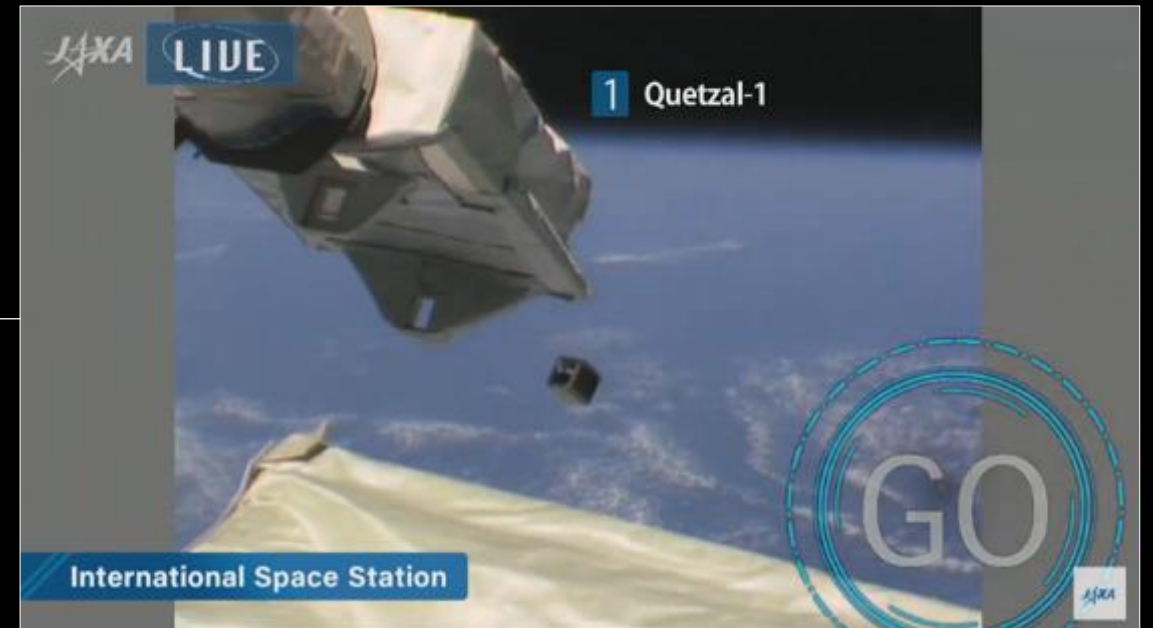
Flight Model  
Handed-over to JAXA  
in December 2019

A photograph of a SpaceX Falcon Heavy rocket launch at night. The rocket is being mated to the Mobile Launcher Platform (MLP) by the Quetzal-1 crane. The MLP is suspended from the MLP Carrier (MLPC) and is being lowered into the MLP Carrier. The rocket is illuminated by the launch pad lights, and a large plume of white smoke is visible on the left side of the image. The launch pad structure is visible in the background.

Launch to the ISS  
SpaceX CRS-20 March  
7, 2020

Quetzal-1  
travels on  
board Dragon  
capsule

- Deployment from the ISS: April 28, 2020
- Currently in operation. Almost 85,000 beacons received from the satellite thus far.



Images: NASA, JAXA

How participating in the  
KiboCUBE programme changed  
the project...

From a dream of a small group of people...

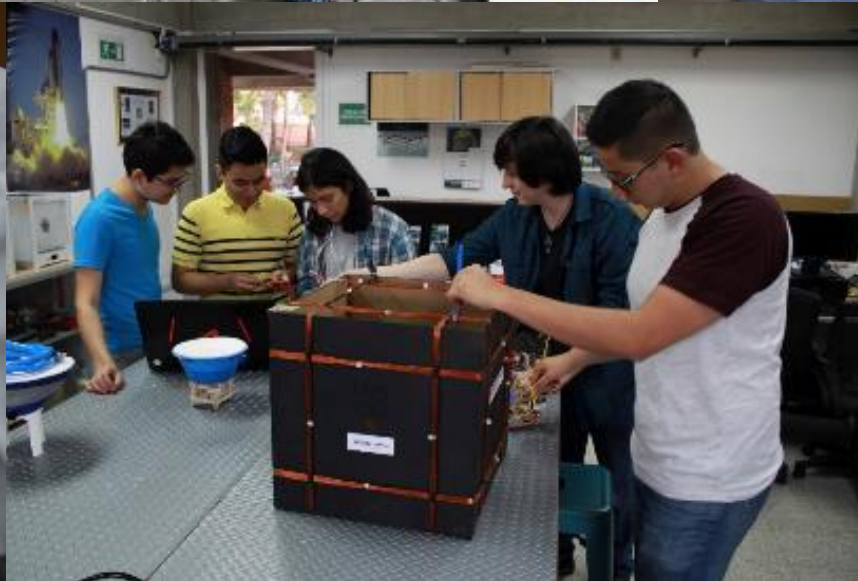
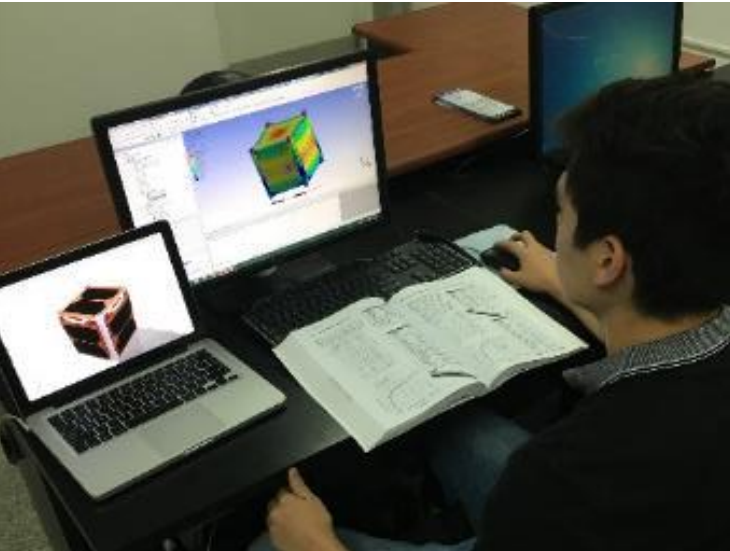


...to an historical achievement of a small country

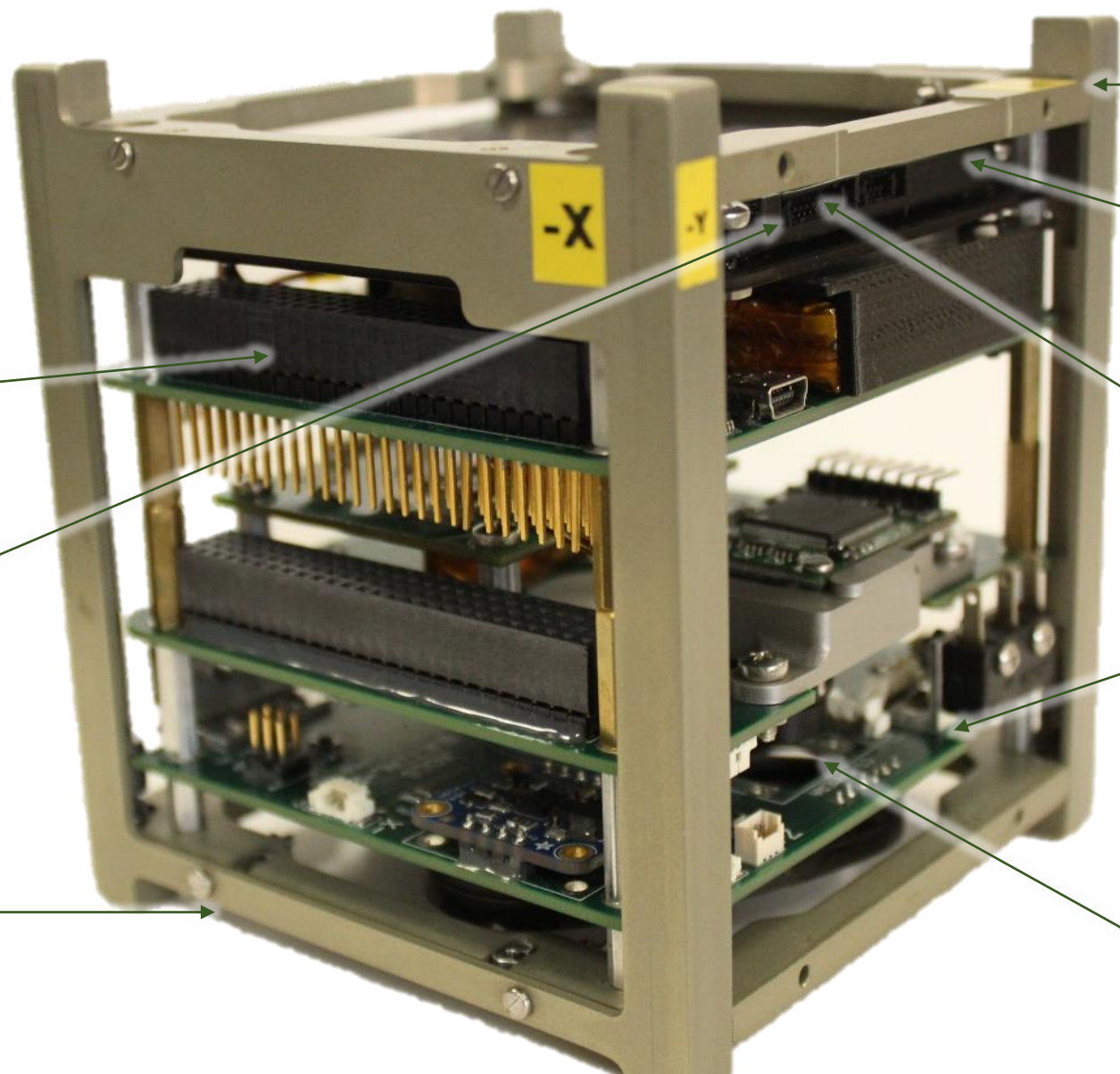




# Developing capacities



# Developing capacities



Electrical Power System (UVG)

Command & Data Handling (UVG)

Antenna Deployment System (UVG)

Structure (UVG)

Communications (purchased)

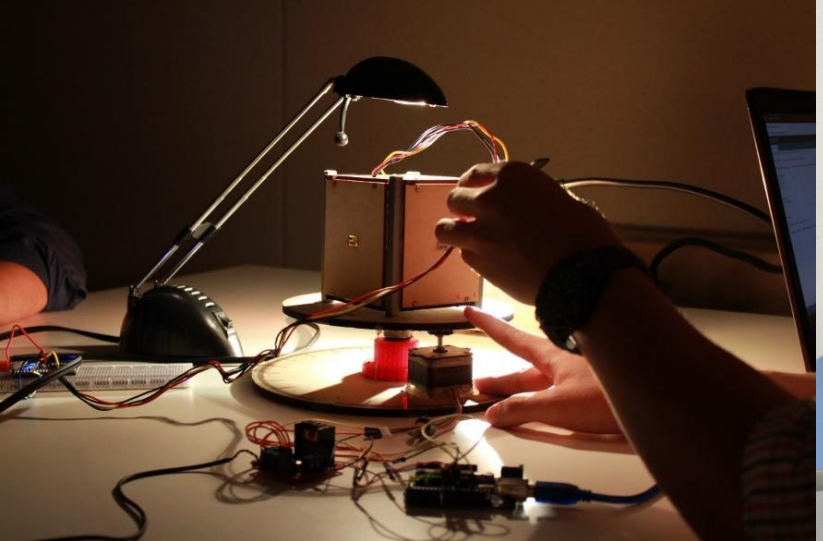
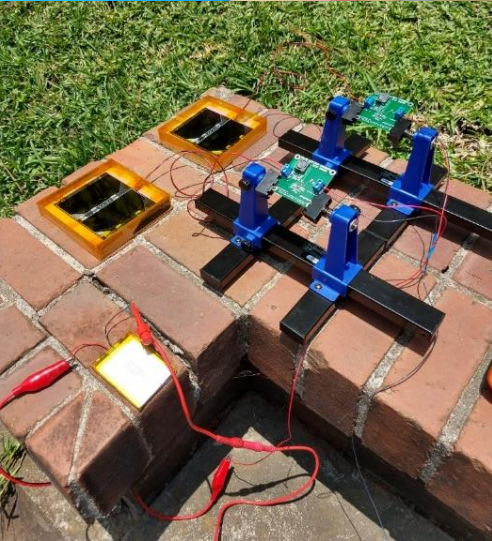
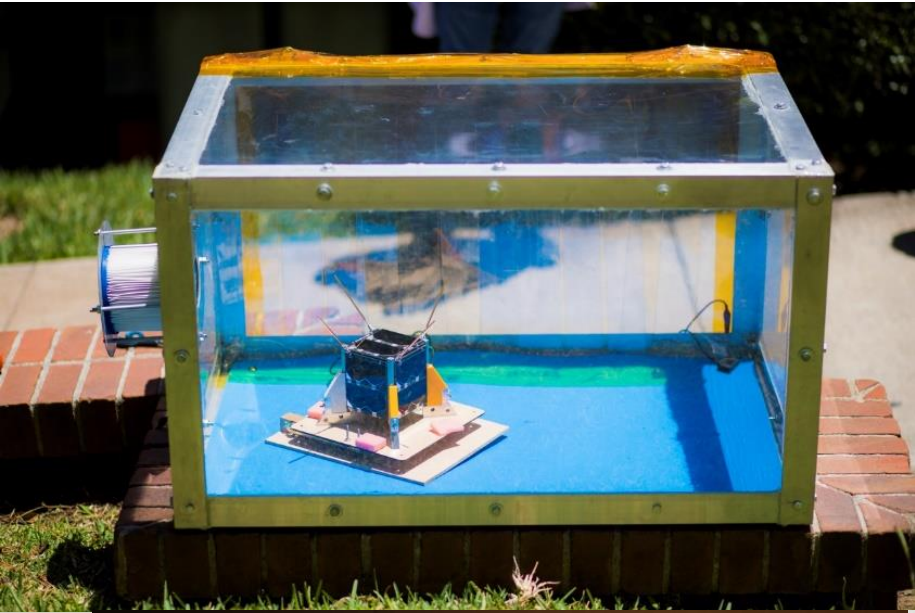
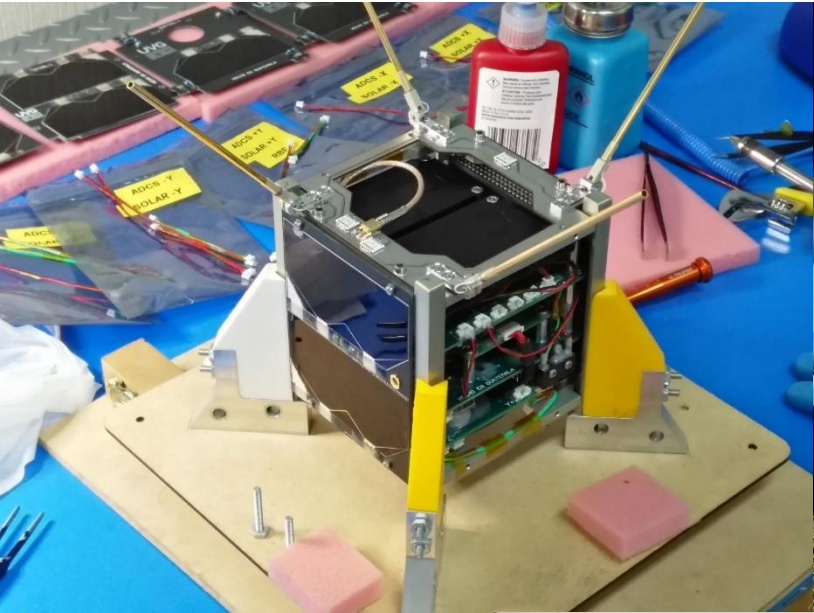
On board computer (purchased)

Attitude

Determination and Pasive Control System (UVG)

Payload (integration in UVG)

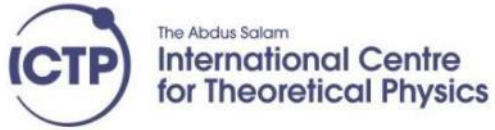
# Developing capacities: test rigs, tools, equipment



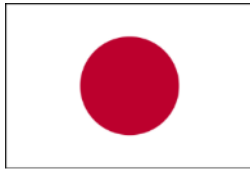


# Partnerships and sponsors

**UVG** | UNIVERSIDAD  
DEL VALLE  
DE GUATEMALA



Embajada de los Estados Unidos de América



EMBAJADA DEL JAPÓN  
EN GUATEMALA



UK SPACE  
AGENCY



ASTROSAT



University of Colorado  
Boulder



UNIVERSIDAD DE CHILE



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