QUETZAL-1: The First Guatemalan Satellite
KiboCUBE Programme
2nd Round Winner

Víctor Ayerdi
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Co-Pi QUETZAL-1
QUETZAL-1 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.
First members of the UVG CubeSat team, 2014
Phase 4 team, 2016-2017
Dr. Luis Zea, co-director of the QUETZAL-1 project, receiving from Dr. Koichi Wakata (JAXA) the contract for the deployment of the satellite from the International Space Station. September, 2017.

Team members during the contract hand-over ceremony in Guatemala. November, 2017.

**Universidad del Valle de Guatemala team selected for second round of KiboCUBE**

VIENNA/TOKYO, 11 September (UN Information Service) - The United Nations Office for Outer Space Affairs (UNOOSA) and the Japan Aerospace Exploration Agency (JAXA) have selected a team from the Universidad del Valle de Guatemala for the second round of the UNOOSA-JAXA KiboCUBE programme. KiboCUBE is an initiative that offers educational and research institutions from developing countries the opportunity to deploy cube satellites (CubeSats) from the Kibo module of the International Space Station.

As the successful candidate, the Universidad del Valle de Guatemala team plans to use its Guatemalan CubeSat to test equipment for monitoring the concentration of harmful cyanobacteria (algae blooms) over inland bodies of water.

"The mission of the project is to design, develop, and operate a CubeSat-class satellite to test a multispectral sensor prototype, opening the field of space science and technology in Guatemala. It will also help us develop our country’s human capital, and will enable the independent acquisition of remote sensing data for natural resource management and other peaceful purposes," said Luis Zea and Victor Ayerdi, coordinators of the project at Universidad del Valle de Guatemala.

"We are pleased to continue our KiboCUBE partnership with JAXA. This is an important initiative that helps foster national capacity in space technology engineering, design and construction, and supports a number of Sustainable Development Goals. I am looking forward to seeing the Universidad del Valle de Guatemala’s work as they develop Guatemala’s first ever satellite, giving the country its own access to space for sustainable development benefits," said UNOOSA Director Simonetta Di Pippo.
OUTREACH CAMPAIGN
• Workshops in schools
• Conferences
• Media publications
55 Bi-weekly publications in newspaper “Prensa Libre”

Competitions to name the satellite and design the mission patch
QUETZAL-1’s launch onboard SpaceX’s CRS-20 Dragon spacecraft. March 6, 2020. Image: NASA

QUETZAL-1’s deployment from International Space Station on April 28, 2020. Image: JAXA

QUETZAL-1 Current Status

- Currently in operation (5 months, 2 weeks)
- More than 60,000 beacons received from the satellite thus far (first beacon received 40 minutes after deployment)

QUETZAL-1’s deployment on the cover of all the newspapers in Guatemala
WHAT’S NEXT...
New projects and opportunities

• As several of the sub-modules of the satellite (approx. 70%) were developed in-house, UVG can be a supplier for future CubeStats in the region.

• Design of nanosatellites: new course taught at UVG by QUETZAL-1 Team members.

• Didactic material: information of the satellite is being incorporated in scholar textbooks in Guatemala and courses in the university.

• UVG applied to the UNOOSA-AIRBUS Bartolomeo opportunity, together with University of Chile, MSpace Enabled MIT Media Lab and PSL-University Mines ParisTech.

• Space-proven manufacturing capabilities allowed UVG to be a team member of the DSRG experiment going around the Moon on Artemis -1

• Exploring collaborations with other institutions.
¡Thank you very much KiboCUBE!

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