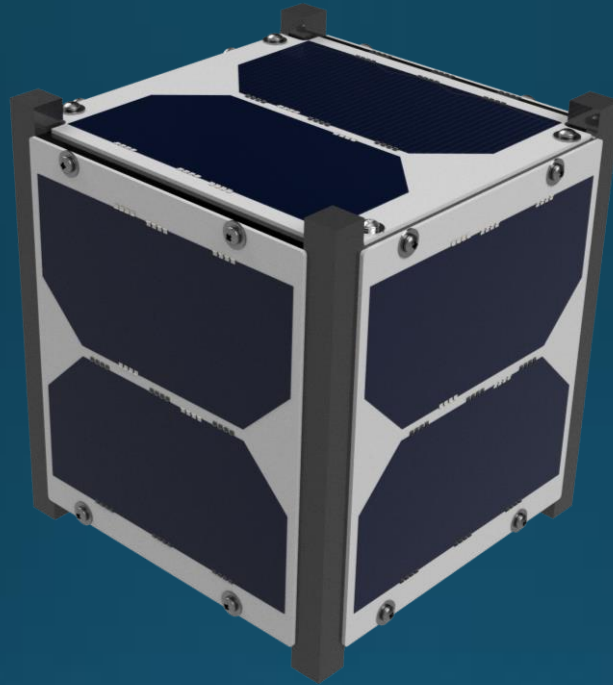


Guatemalan CubeSat

Critical Design Review



Thursday, January 26, 2017

Pasadena, CA, USA: 7:00 AM – 9:00 AM

Colorado, USA: 8:00 AM – 10:00 AM

Guatemala City: 9:00 AM – 11:00 AM

Columbus, OH, USA: 9:00 AM – 11:00 AM

Central Europe Time: 16:00 hr – 18:00 hr

The Review Committee



ANDREW DAHIR

Andrew completed his undergraduate degrees in math and physics, and a minor in astronomy from Texas A&M University-Commerce in 2013. He began his journey toward his PhD at CU-Boulder that following fall, focusing on Astrodynamics & Satellite Navigation Systems. He interned with NASA Huntsville in 2012-2014, serving as the NASA Intern Lead in 2014, and with NASA Goddard during summer 2015. He has worked on 4 CubeSats at CU Boulder, MinXSS, QB50-Challenger, CU-E3 and MAXWELL. He was the Project Manager and System Engineer for both QB50 and MAXWELL and now serves as an advisor for CU-E3 and MAXWELL. His PhD research focus is on Deep Space Autonomous CubeSat Navigation. In his free time, he loves rock climbing, building projects and spending time with his wife, Rachel and dog, Pepper Potts.



CHANTAL CAPILETTI

Chantal is a member of International Academy of Astronautics, an Associate Professor at the University of Brasilia, and she is actively involved on Microsatellite design, manufacturing and launching, on Biomedical Research and on Space Debris. She has been the leader of 6 satellite projects from Italy (UNISAT program and others) and from Brazil (SERPENS), Principal Investigator (PI) of 2 missions concerning cancer cells behavior in space and an ASI (Italian Space Agency) delegate at IADC. She chaired the two IAA Latin American CubeSat Workshops and co-chaired the two IAA Universities Satellites Missions Conferences in Rome, and she is involved in several IAA study groups as chair of Biomedical Research in Space and a member of Applications of Micro-Satellites and CubeSats to Planetary Missions, and a member of Definition and Requirements of Small Satellites. Chantal is the author of more than 30 publications.



ERICK TIJERINO

Erick graduated Cum Laude from Universidad del Valle de Guatemala with a BSc. in Mechanical Engineering, where he later conducted research on cardiovascular system simulation as part of a joint research effort with Nagoya University in Japan. He completed his master's degree studies in aerospace engineering at the University of Central Florida, where he led the hardware design team and oversaw the fabrication of a UNESCO/NASA sponsored remote sensing satellite payload. This project consisted in the design of an earth facing telescope for land cover surveying, part of his responsibilities were to hold Critical Design Reviews with NASA engineer advisers at Kennedy Space Center. Erick specializes in thermo-fluidic systems, internal combustion engines and has broad experience in the design of underwater and space systems. He currently manages the Mechanical Efficiency Laboratory as part of Cummins Inc. research and development department.



JAMES MASON

James Mason received his PhD in aerospace engineering sciences (AES) from the University of Colorado at Boulder (CU) in May 2016. During his time in graduate school, he was the lead student for the Miniature X-ray Solar Spectrometer (MinXSS) CubeSat for 5 years and continues to be heavily involved in the program now as a co-investigator. Over that time, he's been involved in nearly every aspect of the spacecraft development from proposal to mission operations and data analysis. He was also involved in the Colorado Student Space Weather Experiment (CSSWE) and QB50-Challenger CubeSats. He is now the instructor for the CubeSat division of graduate projects at CU/AES, which has two new CubeSats in development simultaneously, and is a partner in the development of the International Satellite Program in Research and Education (INSPIRE) Sat-1 program.



JULIA STALDER

After graduating from the University of California, San Diego with a degree in Aerospace Engineering, Julia Stalder began working as a mechanical engineer at the California Institute of Technology's NASA Jet Propulsion Laboratory (JPL). She led the Mechanical Integration and Test team for the RapidScat instrument which was launched to the International Space Station in September 2014. From its external position on the ESA Columbus module, RapidScat spent two years measuring ocean surface wind velocities and provided data to scientists and organizations that have used this information to study and track the development of several major storms. She currently leads the Mechanical-Thermal Subsystem for the Advanced Microwave Radiometer (AMR) instrument that will be a part of the Surface Water and Ocean Topography mission in 2020. Julia is also the recipient of the NASA Early Career Achievement Medal and recently obtained a Masters in Mechanical Engineering from UCLA.



PHILIPP HAGER

Philipp studied mechanical, aeronautic and aerospace engineering at the Karlsruhe Institute of Technology (KIT) and Technical University of Munich (TUM), Germany. He received a Ph.D. in aerospace engineering from TUM in 2013, researching transient thermal analysis approaches and exploration technologies. During his time as a Ph.D. student he spent several months as visiting scholar at the University of Colorado at Boulder, USA. He worked 2+ years for SpaceTech, in southern Germany before joining the European Space Agency at the European Space Research and Technology Centre (ESTEC) in the Netherlands as a thermal engineer.



SEBASTIAN SCHMIDT

K. Sebastian Schmidt received his Ph.D. in 2005 from the University of Leipzig, Germany. He is an Associate Professor at the Department of Atmospheric and Oceanic Sciences and at the Laboratory for Atmospheric and Space Physics at the University of Colorado in Boulder. His research focuses on atmospheric and surface remote sensing and energy budget studies using aircraft, ground-based, and space-borne observations. Dr. Schmidt is particularly interested in the linkages between imagery-based remote sensing of spatially complex cloud-aerosol fields and their radiative effects, and he studies the effects of three-dimensional clouds on space-borne trace gas spectroscopy. He is regularly involved in aircraft field experiments and engages in flight and mission planning as well as targeted instrument development.



SCOTT PALO

Dr. Palo is the Associate Dean of Research at the University of Colorado, Boulder (CU), where he also serves as Victor Charles Schelke Endowed Professor of the Aerospace Engineering Sciences Department. Since 2006, Prof. Palo has worked on multiple small satellites include DANDE and three academic CubeSats – CSSWE, MinXSS, and QB50 Challenger. He is also the PI for the Air Force supported MAXWELL CubeSat and the Colorado Earth Escape Explorer CubeSat. Prof. Palo holds a Ph.D. in Electrical Engineering from CU and has received multiple accolades, including NASA's Group Achievement Award and the National Science Foundation (NSF) CAREER Award.

The Guatemalan CubeSat Team

MARVIN MARTÍNEZ

Project Manager
Systems Engineer

DANIEL OROZCO
Command & Data Handling

BYRON GARCÍA*

Structure

MIGUEL ZEA
Attitude Determination and Control System

JONATÁN LARA*

Thermal Analyses

*** JOSÉ ANTONIO BAGUR**
Communication

JUAN FERNANDO MEDRANO*

Power

ROBERTO ROSSINO
Payload
Test Rigs

DANIEL GARCÍA

Power

SANTIAGO SOLÓRZANO
Payload

LUIS DUARTE

Command & Data Handling

VICTOR HUGO AYERDI & LUIS ZEA
Project Coordinators

* Alumni who have returned as volunteer engineers

Agenda

Welcome
Project Management
Systems Engineering
Payload
Structure
Thermal
Communication
Power
Command & Data Handling
Attitude Determination & Control
Test Rigs
Acknowledgments



