

11TH ANNUAL CUBESAT DEVELOPERS' WORKSHOP

— *the* EDGE *of* —
EXPLORATION

CAL POLY SAN LUIS OBISPO
APRIL 23-25 2014



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Day 1 Schedule	Wednesday April 23, 2014	Topic	Name	Organization	Presentation Title
7:30:00 AM - 9:00:00 AM	Breakfast				
9:00:00 AM - 9:10:00 AM	Opening, Sponsor and Keynote Welcome				
9:10:00 AM - 9:30:00 AM	Main Event Sponsor Welcome		Scott MacGillivray	Tyvak Nano-Satellite Systems	
9:30:00 AM - 9:50:00 AM	Keynote	(FLIGHT EXPERIENCES, ADVANCED TECHNOLOGIES)	Brigadier General Timothy R. Coffin	Joint Functional Component Command for Space (JFCC Space)	
9:50:00 AM - 10:10:00 AM	speaker 1	FLIGHT EXPERIENCES	Twyman Clements	Kentucky Space	KySat-2: Status Report and Overview of C&DH and Comms Systems Design
10:10:00 AM - 10:20:00 AM	speaker 2	FLIGHT EXPERIENCES	Chris Boshuizen	Planet Labs	On-orbit Results from Dove 3
10:20:00 AM - 10:40:00 AM	speaker 3	FLIGHT EXPERIENCES	Ali Guarneros Luna	NASA AMES	Pioneering the Use of the International Space Station as a Nanosatellite Deployment Platform
10:40:00 AM - 11:00:00 AM	speaker 4	FLIGHT EXPERIENCES	Carl S. Brandon	Vermont Technical College	The Vermont Lunar CubeSat Mission
11:00:00 AM - 11:10:00 AM	Morning Break				
11:10:00 AM - 11:30:00 AM	speaker 5	ADVANCED TECHNOLOGIES	Søren Pedersen	GomSpace	GOMX-1 Flight Experience and Air Traffic Monitoring Results
11:30:00 AM - 11:50:00 AM	speaker 6	ADVANCED TECHNOLOGIES	Robert Twiggs	Morehead State University	The PocketQube Concept
11:50:00 AM - 12:10:00 PM	speaker 7	ADVANCED TECHNOLOGIES	Kevin Zack	Sonoma State University	Development and Operation of the PocketQube T-LogoQube
12:10:00 AM - 12:30:00 PM	speaker 8	ADVANCED TECHNOLOGIES	J. Garrett Jernigan	Sonoma State University	The Application of the Logo Language for the Flight and Ground System of the PocketQube T-LogoQube
12:30:00 PM - 13:40:00 PM	Lunch				

13:40:00 PM - 14:00:00 PM	speaker 9	FLIGHT EXPERIENCES	Joseph Gangestad	The Aerospace Corporation	Forest Fires, Sunlint, and a Solar Eclipse: Responsive Remote Sensing with AeroCube-4
14:00:00 PM - 14:20:00 PM	speaker 10	FLIGHT EXPERIENCES	Eric Baumgarten	Cal Poly San Luis Obispo	IPEX Mission and Status Update
14:20:00 PM - 14:40:00 PM	speaker 11	FLIGHT EXPERIENCES	Paula Pingree	NASA JPL	The Successful Operation of MCubed/COVE-2
14:40:00 PM - 15:00:00 PM	speaker 12	FLIGHT EXPERIENCES	Chantal Cappelletti	GAUSS	UniSat5 Mission
15:00:00 PM - 15:20:00 PM	speaker 13	FLIGHT EXPERIENCES	Andres Martinez	NASA AMES	SporeSat: Measuring the Variable-Gravity Calcium Ion Channel Response in Fern Spores Aboard a Free-flying 3U Nanosatellite
15:20:00 PM - 15:30:00 PM	speaker 14	FLIGHT EXPERIENCES	Bryan Klofas	SRI International	CubeSat Communications Update
15:40:00 PM - 15:50:00 PM	Afternoon Break				
15:50:00 PM - 16:10:00 PM	speaker 15	ADVANCED TECHNOLOGIES	Robert Kelley	Jacobs JETS, Orbital Debris Research & Science Operations	Orbital Debris Mitigation
16:10:00 PM - 16:30:00 PM	speaker 17	ADVANCED TECHNOLOGIES	Courtney Duncan	NASA JPL	Iris Deep Space CubeSat Transponder
16:30:00 PM - 16:50:00 PM	speaker 18	ADVANCED TECHNOLOGIES	Andrew Kalman	SSDL / Stanford University	TECSTARS, a NanoSatellite Telemetry Capture, Storage And Retrieval System
16:50:00 PM - 17:10:00 PM	speaker 19	ADVANCED TECHNOLOGIES	Ian Bournelis	Drexel University	Deployable Package for Enhanced Power and De-Orbit Capabilities in CubeSat Satellites
17:10:00 PM - 17:30:00 PM	Closing Remarks				

18:30:00 PM -
23:00:00 PM

Banquet at Embassy Suites Hotel Ballroom,
333 Madonna Rd, San Luis Obispo, CA 93405

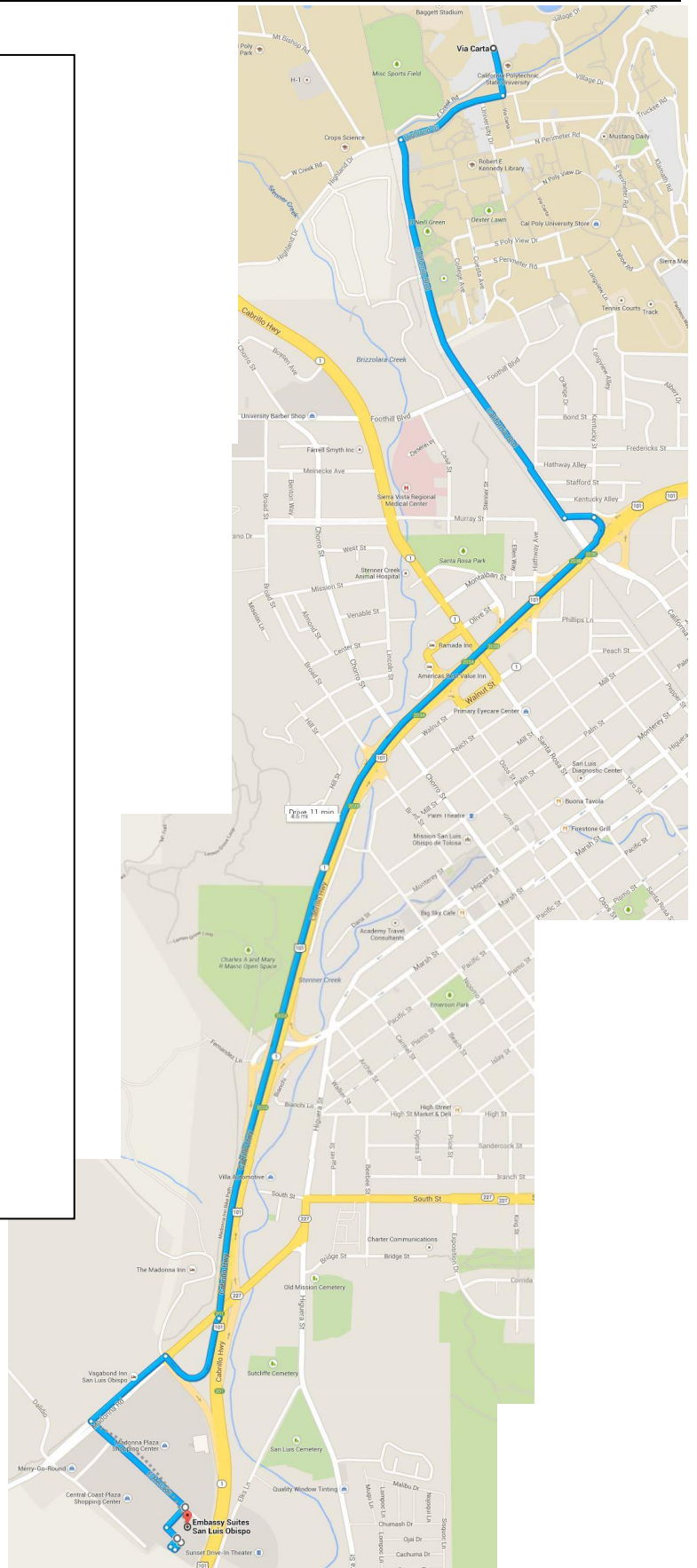
Drive 4.6 mi, 11 min

FROM: Via Carta, San Luis Obispo, CA 93405

1. **Head south** on **Via Carta** toward E Creek Rd
0.1 mi
2. **Turn right** onto **Highland Dr**
0.2 mi
3. **Turn left** onto **California Blvd**
0.9 mi
4. **Turn left** onto **Taft St**
341 ft
5. **Take the ramp** onto **US-101 S**
2.0 mi
6. **Take the CA-227/Madonna Rd** exit
0.2 mi
7. **Turn left** onto **Madonna Rd**
0.2 mi
8. **Turn left** onto **El Mercado**
0.3 mi
9. **Take the 3rd right** toward **El Mercado**
315 ft

DESTINATION: Embassy Suites San Luis Obispo

333 Madonna Rd, San Luis Obispo, CA 93405



Day 2 Schedule	Thursday April 24, 2014	Topic	Name	Organization	Presentation Title
7:30:00 AM – 8:50:00 AM	Breakfast				
8:50:00 AM – 9:00:00 AM	Opening				
9:00:00 AM – 9:20:00 AM	Keynote	EARLY CUBESAT PROGRAM DEVELOPMENT	Prof. Robert van Zyl	French South African Technical Institute at Cape Peninsula University of Technology	
9:20:00 AM – 9:40:00 AM	speaker 1	EARLY CUBESAT PROGRAM DEVELOPMENT	Raquel Pinho	University of Porto and TEKEVER Space	GAMASAT: A 3U CubeSat Communications, De- orbiting and Re-entry Experiment
9:40:00 AM – 10:00:00 AM	speaker 2	EARLY CUBESAT PROGRAM DEVELOPMENT	Katharine Brumbaugh Gamble	The University of Texas at Austin	A Software Tool for CubeSat Mission Risk Estimating Relationships
10:00:00 AM - 10:20:00 AM	speaker 3	EARLY CUBESAT PROGRAM DEVELOPMENT	Jaroslav Laifr	Czech Technical University in Prague, Faculty of Electrical Engineering	The CzechTechSat - A- Space Friendly CubeSat-class Picosatellite Development Progress
10:20:00 AM - 10:40:00 AM	speaker 4	EARLY CUBESAT PROGRAM DEVELOPMENT	Francois Visser	F'SATI CPUT	A Technical Background of the ZACUBE-i Satellite Mission Series
10:40:00 AM - 11:00:00 AM	speaker 5	EARLY CUBESAT PROGRAM DEVELOPMENT	Gabriel Figueiro	Brazilian Space Agency	SERPENS CubeSat Mission
11:00:00 AM - 11:10:00 AM	Morning Break				
11:10:00 AM - 11:30:00 AM	speaker 7	EARLY CUBESAT PROGRAM DEVELOPMENT	Tim DeBenedictis	Southern Stars	Starting a Small Satellite Development Company
11:30:00 AM - 11:50:00 PM	speaker 8	EARLY CUBESAT PROGRAM DEVELOPMENT	Sara Mohammed Ali Ahmed	University of Khartoum	University of Khartoum Cubesat Project Feasibility Case Study

11:50:00 AM - 12:10:00 PM	speaker 9	EARLY CUBESAT PROGRAM DEVELOPMENT	Victor Eberhardt Menegon	Federal University of Santa Catarina (UFSC)	Brazilian Inter-University CubeSat Mission Overview
12:10:00 PM - 12:30:00 PM	speaker 10	EARLY CUBESAT PROGRAM DEVELOPMENT	StangSat Team	Merritt Island High School	Risk Mitigations to Allow for Inter-CubeSat Wi-Fi Communication During Launch
12:30:00 PM - 13:50:00 PM	Lunch				
13:50:00 PM - 14:10:00 PM	speaker 11	(FUTURE MISSIONS)	Garrett Skrobot	NASA KSC LSP	NASA Educational Launch of Nanosatellite Missions Update
14:10:00 PM - 14:30:00 PM	speaker 12	(FUTURE MISSIONS)	Dan Saldana	Valley Christian High School	ISS Science Experiment Presentation
14:30:00 PM - 14:50:00 PM	speaker 13	(FUTURE MISSIONS)	Kennedy Haught	Morehead State University	Small Satellite Mission Operations at Morehead State University
14:50:00 PM - 15:10:00 PM	speaker 14	(FUTURE MISSIONS)	Trevor C. Sorensen	Hawaii Space Flight Laboratory (HSFL)	Implementing the Comprehensive Open-architecture Space Mission Operations System (COSMOS) to Operate Multiple CubeSats
15:10:00 PM - 15:30:00 PM	speaker 15	(FUTURE MISSIONS)	Samudra E. Haque	The George Washington University	Agile development process of a quad-channel Micro-Cathode Arc Thruster (μ CAT) subsystem for the 1.5U BRICSat-P CubeSat Mission
15:30:00 PM - 15:40:00 PM	Afternoon Break				
15:40:00 PM - 16:00:00 PM	speaker 16	(FUTURE MISSIONS)	Ryan Kingsbury	MIT	Two-Stage Control for CubeSat Optical Communications
16:00:00 PM - 16:20:00 PM	speaker 17	(FUTURE MISSIONS)	John Conklin	University of Florida	The CHOMPTT Precision Time Transfer CubeSat Mission
16:20:00 PM - 16:40:00 PM	speaker 18	(FUTURE MISSIONS)	D Laurence Thomsen III	NASA LRC	Shields-1, A CubeSat With a Radiation Shielding Research Payload

16:40:00 PM - 17:00:00 PM	speaker 19	(FUTURE MISSIONS)	Jeremy Straub	University of North Dakota	Considering the Educational Benefits of a CubeSat Program
17:00:00 PM - 17:20:00 PM	speaker 20	(FUTURE MISSIONS)	Andrew Klesh	NASA JPL	INSPIRE: Interplanetary NanoSpacecraft Pathfinder in Relevant Environment
17:20:00 PM - 17:30:00 PM	speaker 21	INDUSTRY	Rich Pournelle	NanoRacks	Commercial CubeSat Launches from the ISS
17:30:00 PM - 17:40:00 PM	speaker 22	INDUSTRY	Austin Williams	Tyvak Nano-Satellite Systems	CubeSat Proximity Operations Demonstration (CPOD) Vehicle and Avionics Design
17:40:00 PM - 17:45:00 PM	Closing Remarks				

Day 3 Schedule	Friday April 25, 2014	Topic	Name	Organization	Presentation Title
7:30:00 AM - 8:30:00 AM	Breakfast				
8:30:00 AM - 8:40:00 AM	Opening				
8:40:00 AM - 9:00:00 AM	Keynote	(ADVANCED TECHNOLOGIES, FUTURE MISSIONS)			
9:00:00 AM - 9:20:00 AM	speaker 1	ADVANCED TECHNOLOGIES	Ricardo Tubio- Pardavila	Cal Poly	The SatNet Project: towards an Open- Source Ground Station Network for CubeSats
9:20:00 AM - 9:40:00 AM	speaker 2	ADVANCED TECHNOLOGIES	Sanny R Omar	Auburn University Student Space Program	CubeSat Formation Control using Differential Aerodynamic Forces
9:40:00 AM - 10:00:00 AM	speaker 3	ADVANCED TECHNOLOGIES	Randa Milliron	Interorbital Systems	Interorbital Systems' 2014 Flight Test Program and Launch Manifest Update
10:00:00 AM - 10:20:00 AM	speaker 4	ADVANCED TECHNOLOGIES	Chad Frost	NASA AMES	Expanding the Global Sensor Web with CubeSats
10:20:00 AM - 10:40:00 AM	speaker 5	ADVANCED TECHNOLOGIES	Samuel Noah Sipe	USNA	The Unix Space Server: USS Langley, The World's First Open Source Webserver in Space
10:40:00 AM - 11:00:00 AM	speaker 6	ADVANCED TECHNOLOGIES	David M. Klumpar	NASA HQ	An Enhanced Role for Scientific CubeSats at NASA
11:00:00 AM - 11:10:00 AM	Morning Break				
11:10:00 AM - 11:20:00 AM	speaker 7	INDUSTRY	Craig Clark	Clyde Space	Next Generation Power Systems for CubeSats of All Sizes
11:20:00 AM - 11:30:00 AM	speaker 8	INDUSTRY	Isaac Nitschke	Space Systems Loral	SSL Information Session
11:30:00 AM - 11:40:00 AM	speaker 9	INDUSTRY	Adam Hadaller	Spaceflight Inc.	CubeSat Preferred Orbits and Launch Options

11:40:00 AM - 11:50:00 AM	speaker 10	INDUSTRY	Christopher Hartney	Millennium Engineering and Integration Co.	Modular Rapidly Manufactured SmallSat: Using Advanced Manufacturing processes for CubeSats
11:50:00 AM - 12:00:00 AM	speaker 11	INDUSTRY	Daniel L. Oltrogge	Analytical Graphics Incorporated	QB50 Relative Motion and Deployment Optimization
12:00:00 AM - 12:10:00 PM	speaker 12	INDUSTRY	Joe Maly	Moog CSA	CubeSat Launch Accommodations and Propulsive Adapters
12:10:00 AM - 12:20:00 PM	speaker 13	INDUSTRY	Clint Hadwin	Space Micro Inc	Radiation and Reliability Considerations in Digital Systems for Next Generation CubeSats
12:20:00 PM - 13:40:00 PM	Lunch				
13:40:00 PM - 14:00:00 PM	speaker 14	ADVANCED TECHNOLOGIES	James Meub	Air Force Research Laboratories	Targeted Mission Assurance Philosophies: A Tale of Two CubeSats
14:00:00 PM - 14:20:00 PM	speaker 15	ADVANCED TECHNOLOGIES	Antonio J. Ricco	NASA AMES	BioSentinel NanoSatellite: DNA Damage-and-Repair Experiment Beyond Low Earth Orbit
14:20:00 PM - 14:40:00 PM	speaker 16	ADVANCED TECHNOLOGIES	Chris Shaffer	UCLA	An Update on UCLA's Electron Losses and Fields Investigation
14:40:00 PM - 15:00:00 PM	speaker 17	ADVANCED TECHNOLOGIES	Tam Nguyen	MIT	Infrared Earth Horizon Sensors for CubeSat Attitude Determination
15:00:00 PM - 15:20:00 PM	speaker 18	ADVANCED TECHNOLOGIES	James Chartres	NASA AMES	The Nanosat Launch Adapter System (NLAS)
15:20:00 PM - 15:40:00 PM	Afternoon Break				
15:40:00 PM - 15:50:00 PM	speaker 19	INDUSTRY	Walter Holemans	Planetary Systems Corp.	Innovative Uses of the Canisterized Satellite Dispenser (CSD)
15:50:00 PM - 16:00:00 PM	speaker 20	INDUSTRY	Rex Ridenoure	Ecliptic Enterprises Corporation	CubeSat-Class Spinning Landers for Solar System Exploration Missions

16:00:00 PM - 16:10:00 PM	speaker 21	INDUSTRY	Jeroen Rotteveel	ISIS	A data processing building block for CubeSat payloads and subsystems
16:10:00 PM - 16:20:00 PM	speaker 22	INDUSTRY	Emil Superfin	a.i. solutions	SmallSat Formation Flying Testbed
16:20:00 PM - 16:30:00 PM	Closing Remarks				