Paving the Way for Small Satellite Access to Orbit

Cyclops’ Deployment of SpinSat, the Largest Satellite Ever Deployed from the International Space Station

AIAA SMALL SATELLITE CONFERENCE


PRESENTER: DANNY NEWSWANDER (NASA JSC)
Depender of Satellites 10-100 kg in mass

Satellites of Unique Shapes & Sizes

No Fees for Usage or Launch

Fully Operational

Cyclops
Interfaces with JAXA Robotic Airlock, ISS Robotic Arms, and Satellite

Cyclops

Mechanical Actuated by ISS Robotic Arm

Simple Satellite Interface
Mass of 52 kg
Dia of 55.9 cm (22”)
Deployed Nov 28, 2014
Made by Naval Research Laboratory

SpinSat
Advanced Thruster & Atmospheric Neutral Density Experiment
SpX-4
Pressurized, Soft Stowed Cargo

Arrived on ISS
Sept 23, 2014

Up It Goes!

Stowed on-board ISS till Deployment
Out It Goes!

Cyclops Installed

SpinSat Unpacked

Out of the Airlock

SpinSat Installed

Into the Airlock
Away It Goes!
Texas A&M University

Univ. of Texas at Austin

Autonomous Rendezvous and Docking Experiment

LoneStar-2

64 cm x 64 cm x 31 cm; (25” x 25” x 12”) 50 kg

Deployment 2016!
Satellite Characteristics

User Requirements

Satellite Interfaces
(Mounting Fixture, Envelope, Bonding, …)

Satellite Environments
(Acceleration, Loads, Thermal, Deployment Force, Pressure, Survivability, …)
ARE YOU NEXT?

POCs for Future Cyclops’ Users:

CASIS  http://www.iss-casis.org/

Questions?
THANK YOU!