2014 Workshop: CubeSat Lessons Learned

Long title
CubeSats: Lessons Learned
Conveners
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Description

In an era of declining budgets, cubesats may be the best approach to maintaining a vibrant in-situ space science community. Recent experiments have shown that spatially distributed measurements (from the ground and/or in space) provide datasets that cannot be matched by single large-scale missions. In an effort to stimulate cubesat program growth it will be advantageous to provide a forum where interested scientists can benefit from the lessons learned by past and present cubesat PIs. This workshop will kick-off such an agenda by communicating the experiences of these PIs in order to stimulate ideas for future cubesat needs and mission scenarios. Specific topics for round-table discussion will include: 1. Flight systems status (ADCS, solar panels, charging systems, telemetry, instrumentation) 2. Proposal evaluation criteria - are we emphasizing the right things? How do NASA, AF, and NSF criteria differ? 3. Utility of cubesat formation flying for specific science objectives 4. Future mission plans 5. Availability of low and high-inclination orbits

Justification

Challenge - Demonstrate that small satellites can perform in LEO to contribute to space science objectives that have traditionally been approached through larger satellite platforms. This is an objective that is clearly articulated in the Decadal Survey. 1. We will address the issue by inviting PIs from past or current cubesat projects to present lessons learned from their experiences. This will include frank discussions of proposal preparation, challenges of student-centric instrument design, and all aspects of cubesat operation. Invited speakers should include J. Cutler, S. Palo, D. Rowland, R. Doe, and C. Swenson. 2. A PI panel discussion should follow the short presentations to discuss resource limitations and needs. 3. Open forum discussion following the PI panel will aim to develop a list of progress metrics specific to cubesat mission success.

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