2024 Workshop: IT CubeSats Missions

Long title
Enhancing Our Understanding of the Ionosphere/Thermosphere through CubeSat Missions
Conveners
Rebecca Bishop
Bryce Halter
Aimee Merkel
Scott Palo
Diana Swanson
Charles Swenson
Maggie Zheng
Rebecca.Bishop@aero.org
Description

In the past five years, a number of CubeSat missions have successfully provided observations of the Ionosphere and lower thermosphere. Missions such as SORTIE, IDEASSat,INSPIREsat1, DAILI, SPORT, and LLITED have provided a range of neutral and plasma measurements at altitudes below 550 km from a variety of instruments. This workshop focusses on the contributions of past, current, and future NSF and NASA CubeSat missions and the role of their observational data in ongoing IT studies. The three objectives of the workshop are:
1. Highlight observations and science returns from recent CubeSat missions.
2. Forge collaborations among current and future CubeSat missions along with ground-based instruments and facilities for expanded studies and enhanced science returns.
3. Promote observational capabilities of soon-to-be launched IT CubeSats.

Agenda

Introduction:

10:00 – 10:05 Session Overview: Rebecca Bishop

10:05 – 10:15 Current/Past Mission Overview Summary: Diana Swanson

Current/Past IT Missions.

10:15 – 10:25 DAILI: Jim Hecht

10:25 – 10:35 SPORT: Swenson

10:35 – 10:45 ECLIPSE: Bruce Fritz

10:45 – 10:55 LLITED MIGSI: Jim Clemmons

10:55 – 11:05 LLITED PIP: Shantanab Debchoudhury

11:05 – 11:15 Discussion

Future IT Missions.

11:15 – 11:25 WindCube: Qian Wu

11:25 – 11:35 DYNAGLO: Aimee Merkel

11:35 – 11:45 SWARM-EX: Scott Palo

11:45 – 12:00 Discussion

Justification

The maturing of CubeSats from technology demonstrations to more science and observational focused missions has begun to firmly establish their potential for significant contributions to aeronomy research. In recent years, the number of IT focused science missions has increased, paving the way for a potential grassroots IT observatory. Through a combination of individual CubeSat missions, sophisticated ground-based instruments, data buys from LEO commercial constellations, hosted payloads, and the more traditional satellite mission, will allow the community to investigate the physics of the global IT. It is important to understand the type of observations that can be obtained, their quality, and the level of science investigations enabled by recent CubeSat mission in order to incorporate them into future IT studies and experiment plans.

Related to CEDAR Science Thrusts:
Encourage and undertake a systems perspective of geospace

Develop observational and instrumentation strategies for geospace system studies
Manage, mine, and manipulate geoscience/geospace data and models
Workshop format
Short Presentations
Round Table Discussion
Keywords
CubeSat Missions, Ionosphere/Thermosphere, System Science
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