National Aeronautics and Space Administration

2024 NASA

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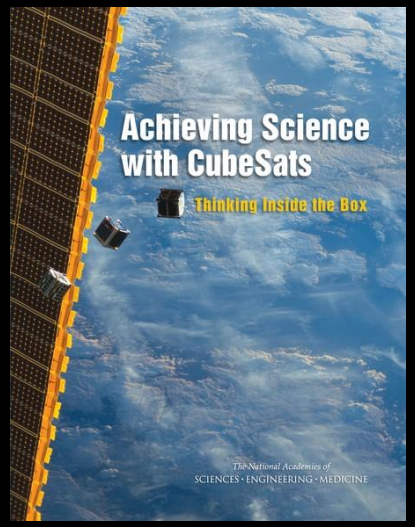
Science Mission Directorate
Chair, Small Spacecraft Coordination Group
NASA Headquarters

NASA Townhall
SmallSat Conference
Aug 5, 2024

The Vision for Small Missions

2012



2016

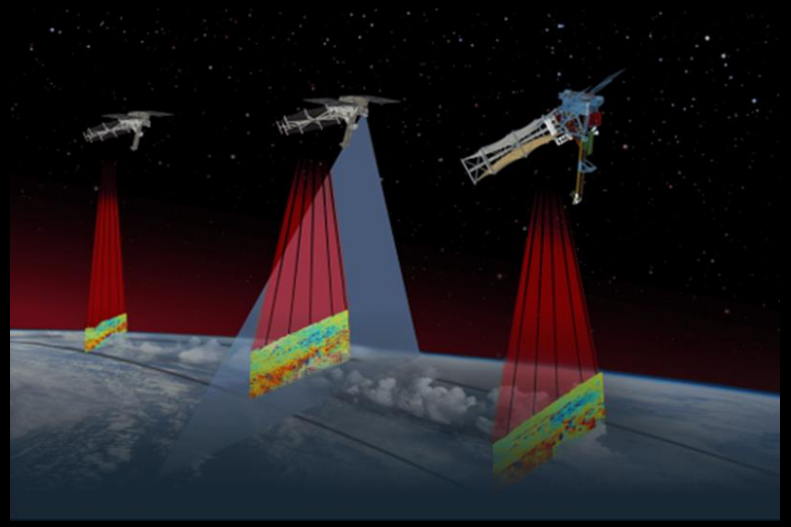
2016

2018

2018

Small satellite community can contribute to the scientific and technical rationale for a sustainable, productive, and relevant role within a balanced portfolio of strategic science, technology, and exploration missions

SmallSats have “Come of Age”



Convective Mass Flux observations by the INvestigation of Convective UpdraftS (INCUS) mission

Verification of the orbital stability for the Lunar Gateway's planned NRHO with Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment (CAPSTONE)

Active Thermal Architecture providing payload thermal support and setpoint thermal control for the Active Cooling for Multispectral Earth Sensors (ACMES) mission.

New Observation Methods

Strategic Knowledge Gaps

Spacecraft Subsystems

Transformative Science, Technology Exploration and Demonstration, Enabled by Access to Space

2024 Year in Review

Completed

INGENUITY Helicopter

Launched

PREFIRE, CURIE, BURSTCUBE, HYTI, SNOOPI, R5-S2, R5-S4, TechEdSat 11

Up Next

ESCAPADE, LunarTrailblazer, Starling 1.5 Demo

ACS3 Solar Sail Demo

Developing and Infusing Technologies into Science Missions

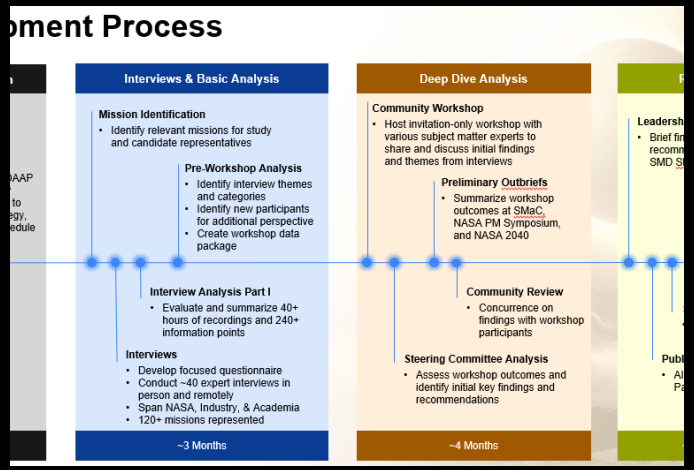
LEARN Forum

LEARNing from Experiences, Achievements, and Resolution Navigation
2021 to present

Building a SmallSat Community including technical knowledge sharing and the identification of common challenges and possible solutions

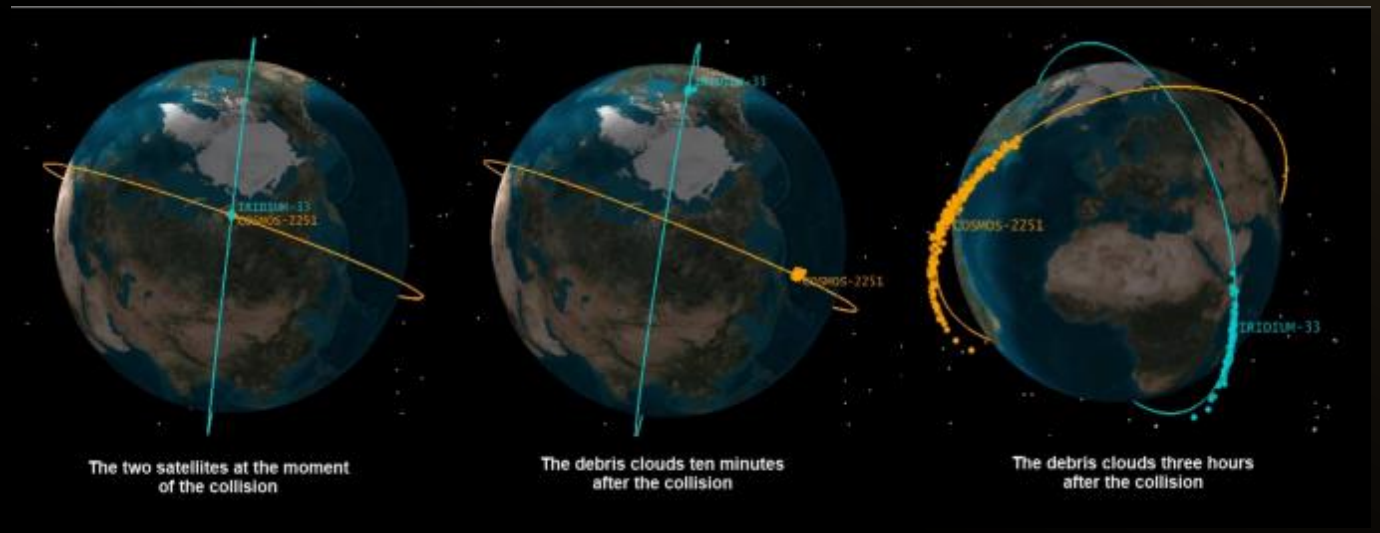
NEXT LEARN FORUM for invited NASA PIs Sept 24-25
NASA ARC

SMD Lessons Learned Report “Can Large Science Missions Benefit from Class-D/SmallSat Lessons Learned?”

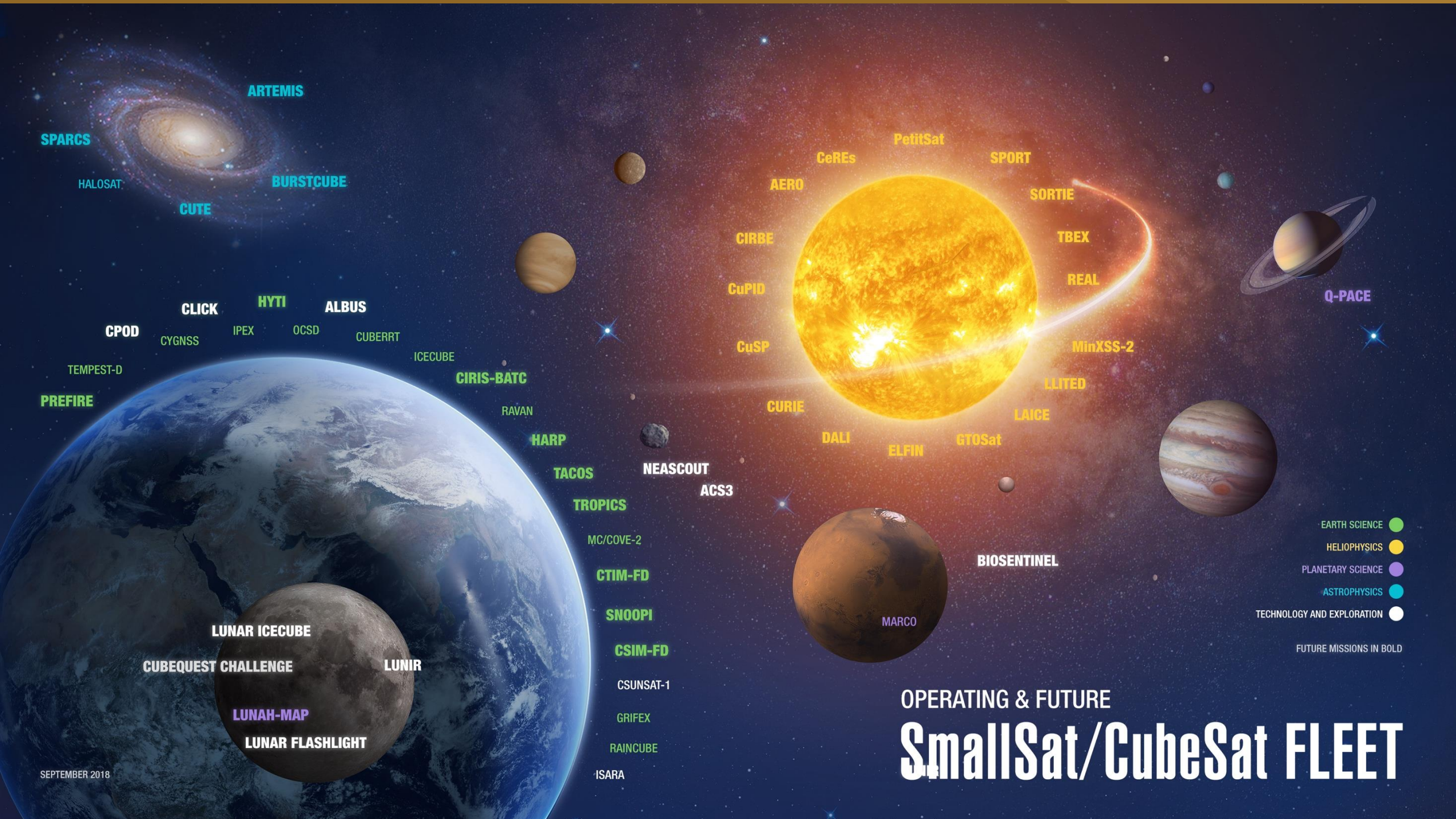


Identify Optimal Practices from SmallSat/Class D Missions Applicable to Class A-C Mission Development

Battery Passivation Workshop

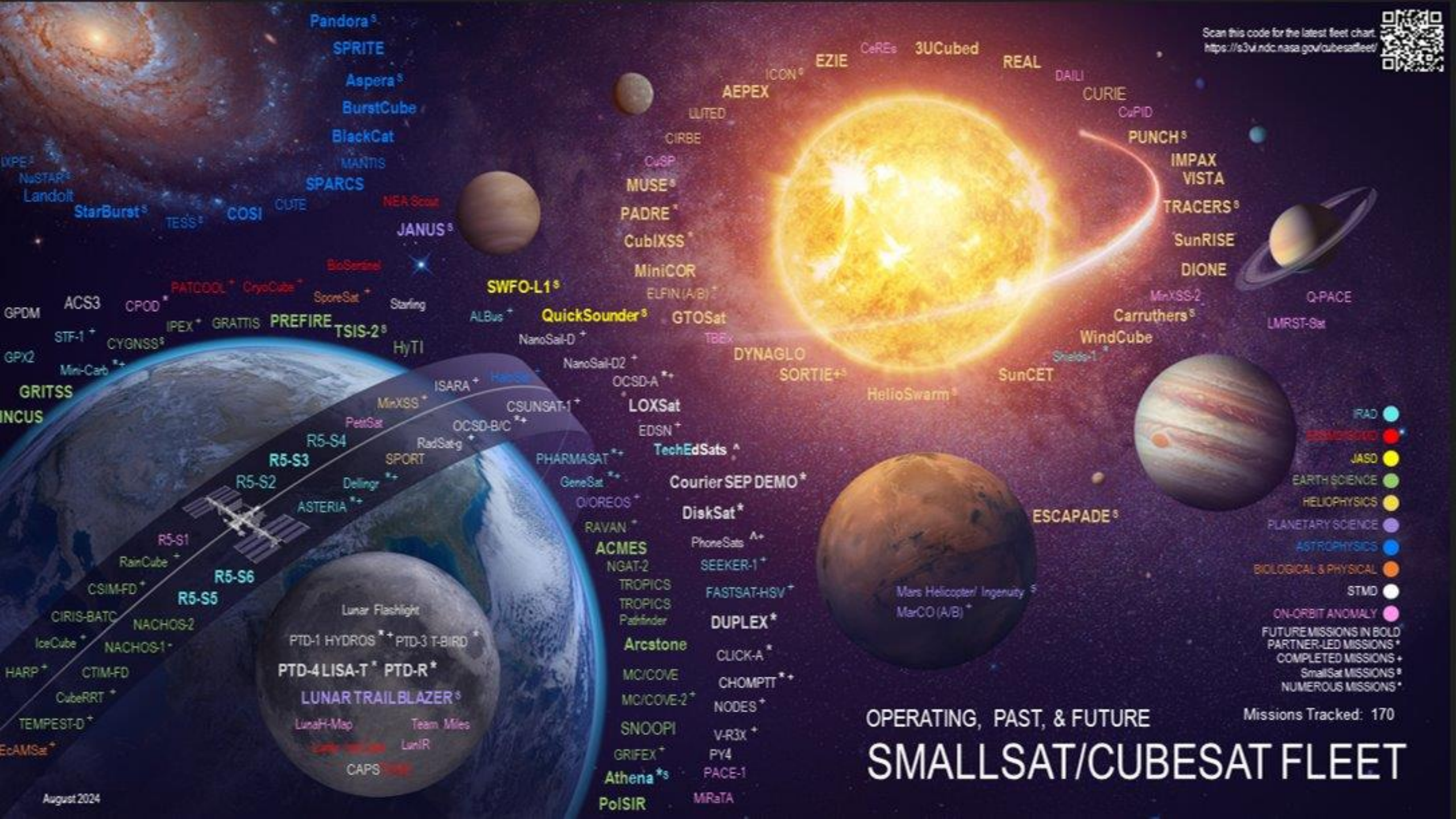


RFI on Battery Passivation methods
Battery passivation workshop in 2025 led by OSMA and co-chair by STMD and SMD
Discuss battery passivation topics and adherence to NASA-STD 8719.14C



OPERATING & FUTURE

SmallSat/CubeSat FLEET


Scan this code for the latest fleet chart.
https://s3vi.ndc.nasa.gov/cubesatfleet/
Pandora
SPRITE
Aspera
BurstCube
BlackCat
MANTIS
SPARCS
Landolt
StarBurst
TESS
COSI
CUTE
NEA Scout
JANUS
BioSentinel
IXPE
NuSTAR
EZIE
CeREs
3UCubed
REAL
ICON
AEPEX
LUTED
CIRBE
CuSP
MUSE
PADRE
CubIXSS
MiniCOR
ELFIN (A/B)
SWFO-L1
QuickSounder
ALBus
GTOSat
TBEx
NanoSail-D
NanoSail-D2
OCSD-A
LOXSat
EDSN
TechEdSats
Courier SEP DEMO
DiskSat
PhoneSats
SEEKER-1
FASTSAT-HSV
DUPLEX
CLICK-A
CHOMPTT
NODES
V-R3x
PY4
PACE-1
MiRaTA
Athena
PolSIR
GRIFEX
SNOOPI
MC/COVE-2
MC/COVE
Arcstone
TROPICS Pathfinder
TROPICS
NGAT-2
ACMES
RAVAN
CIOREOS
GeneSat
PHARMASAT
OCSD-B/C
CSUNSAT-1
MinXSS
ISARA
HyTI
TSIS-2
PREFIRE
GRATTIS
IPEX
CYGNSS
STF-1
Mini-Carb
GPIQ2
GRITSS
INCUS
GPDM
ACS3
CPOD
PATCOOL
CryoCube
SporeSat
Starling
R5-S4
R5-S3
R5-S2
R5-S1
R5-S6
R5-S5
PetitSat
RadSat-g
SPORT
Dellingr
ASTERIA
RainCube
CSIM-FD
CIRIS-BATC
NACHOS-2
NACHOS-1
IceCube
HARP
CTIM-FD
CubeRRT
TEMPEST-D
EcAMSat
Lunar Flashlight
PTD-1 HYDROS
PTD-3 T-BIRD
PTD-4 LISA-T
PTD-R
LUNAR TRAILBLAZER
LunaH-Map
Team Miles
LunIR
CAPS
DAILI
CURIE
CuPID
PUNCH
IMPAX
VISTA
TRACERS
SunRISE
DIONE
MinXSS-2
Carruthers
WindCube
Shields-1
SunCET
HelioSwarm
SORTIE
DYNAGLO
Q-PACE
LMRST-Sat
ESCAPADE
Mars Helicopter/ Ingenuity
MarCO (A/B)
IRAD
JASD
EARTH SCIENCE
HELIOPHYSICS
PLANETARY SCIENCE
ASTROPHYSICS
BIOLOGICAL & PHYSICAL
STMD
ON-ORBIT ANOMALY
FUTURE MISSIONS IN BOLD
PARTNER-LED MISSIONS *
COMPLETED MISSIONS +
SmallSat MISSIONS $
NUMEROUS MISSIONS ^
OPERATING, PAST, & FUTURE
SMALLSAT/CUBESAT FLEET
Missions Tracked: 170
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