2021 NASA Small Spacecraft Virtual Forum: Opening Session
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MSFC PAST, PRESENT and FUTURE

Shaping the Marshall of Tomorrow

NASA Strategic Plan

2020 Management Emphasis
1. Deliver on the Mission
2. Ensure a Vibrant Workforce
3. Build Agile Partnerships
4. Risk Leadership
5. Leading Change

FASTSAT 2010: First Government Designed, Developed and Flown ESPA Class Spacecraft

On Orbit insertion NanoSail-D

MSFC: Long Successful Legacy in Space Transportation & Propulsion, Space Systems and Scientific Research & Instruments
Areas of Focus for the Center: MSFC Small Spacecraft Mission Capabilities Integration (SSMC)

Communities of Interest for Small Spacecraft Mission Capabilities Integration: Adopt small spacecraft as part of a balanced program of discovery, incorporating new technology & processes, mission formulation, and launch capabilities to enable unique and timely science, exploration and technologies.

- **Transportation for Unique Missions:** SLS
- **Accommodations for Cubesat**
- **Unique Mission Accommodations:** Propulsive ESPA

**Advanced Manufacturing & Materials:** Additive

**Advanced System Engineering, Testing & Mission Assurance**

**MSFC, Agency, Industry, OGAs and Academic partners addressing next generation opportunities for enhancement of our people and community skills, capabilities, innovation challenges and the development of leadership and management capabilities**

**Space Operations and Control:** Diversity of Investigators, complexity of human and non-human rated space experiments/instruments/facilities, Lunar surface systems and spacecraft

**Propulsion:** Green & Hybrid

**Science, Technology & Exploration Payloads:** Instruments, technologies, systems and missions
Solar Cruiser

Demonstrate solar sail propulsion to enable near-term missions addressing high-priority science questions defined in the Solar and Space Physics Decadal Survey:

Scintillation Prediction Observation Research Task (SPORT)

Understanding what drives nighttime formation of dense plasma bubbles in the ionosphere, scattering radio signals:

Near-Earth Asteroid Scout (NEA Scout)

Demonstrate the capability of an extremely small spacecraft, propelled by a solar sail, to perform reconnaissance of an asteroid at low cost.

Lunar Flashlight

Low-cost secondary payload concept will map the lunar south pole for volatiles and demonstrate several technological firsts, including being the first CubeSat to reach the Moon, the first planetary CubeSat mission to use green propulsion, and the first mission to use lasers to look for water ice.

Lightweight Integrated Solar Array and anTenna (LISA-T)

PTD Mission Objective: Demonstrate the deployment, operation, and environmental survivability of the LISA-T power generation and communication array.