

## **Historical Context**

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## **Interagency Report on Orbital Debris**

NASA issues a comprehensive set of orbital debris mitigation guidelines

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#### **Meteoroid Environment Office**

Established by OSMA in response to growing concerns about meteoroid impacts on spacecraft

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### **ODMSP Updated**

Provides a reference to promote efficient and effective space safety practices 2 0 2 4

### NASA Space Sustainability Strategy

Volume 1: Earth Orbit with the follow-on Volume for Cislunar Space and the Lunar Surface

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#### **ODPO**

Established the Orbital Debris Program Office to observe, understand, monitor, and model space debris 2 0 0 1

#### **ODMSP**

The first version of the Orbital Debris Mitigation Standard Practices is established 2 0 0 5

#### CARA

Conjunction
Assessment Risk
Analysis program
set up to assess risk
of close approaches

2021 & 2022

## National Orbital Debris R&D Plan and Implementation Strategy

Shift to integrated approach for space sustainability, calling for coordinated national effort

NASA Defines Space Sustainability as:

The ability to **maintain the conduct of space activities** indefinitely into the future in a manner that is safe peaceful, and responsible to meet the needs of the present generation while preserving the outer space environment for future activities and limiting harm to terrestrial life.



- Develop a Framework for Assessing Space Sustainability
- Prioritize the Ways to Minimize
  Uncertainties About Orbital
  Debris and Operations
- Lower Barriers Through
  Developing and Transferring
  Technology
- Update or Develop Policies that Provide Incentives to Support Space Sustainability
- Continue and Improve
  Coordination and Collaboration
  Outside of NASA
- 6 Improve NASA-internal Organization



## NASA'S SPACE SUSTAINABILITY STRATEGY

VOLUME 1: EARTH ORBIT



## NASA'S SPACE SUSTAINABILITY STRATEGY

VOLUME 1: EARTH ORBIT

## DIRECTOR OF SPACE SUSTAINABILITY

A SINGLE, SHARED FRAMEWORK



IDENTIFY AND MINIMIZE CRITICAL UNCERTAINTIES



NEW TECHNOLOGY DEVELOPMENT



**UPDATED POLICY NEEDS** 



COORDINATING A
MULTILATERAL RESPONSE



## NASA is seeking input on Lunar Surface and Cislunar Space Sustainability

## Space Sustainability is:

 The ability to maintain the conduct of space activities indefinitely into the future in a manner that is safe peaceful, and responsible to meet the needs of the present generation while preserving the outer space environment for future activities and limiting harm to terrestrial life.

### Space Sustainability is not:

- Funding stability of programs
- Building a cislunar economy

## What are the major challenges, and potential technology or policy solutions, associated with:

- Keeping missions alive long enough to complete their mission and post-mission phases?
- Ensuring that missions don't interfere with each other?
- Ensuring that the operating environment is sustainably used so that future missions can operate?

Please provide any thoughts or feedback via email to: <a href="mailto:thomas.j.colvin@nasa.gov">thomas.j.colvin@nasa.gov</a> or <a href="mailto:travis.f.blake@nasa.gov">travis.f.blake@nasa.gov</a>



# FOR THE SECRETS OF THE UNIVERSE



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