National Aeronautics and Space Administration

2026
NASA
SCIENCE

Small Spacecraft Enabling Science & Informing NASA's Artemis Missions

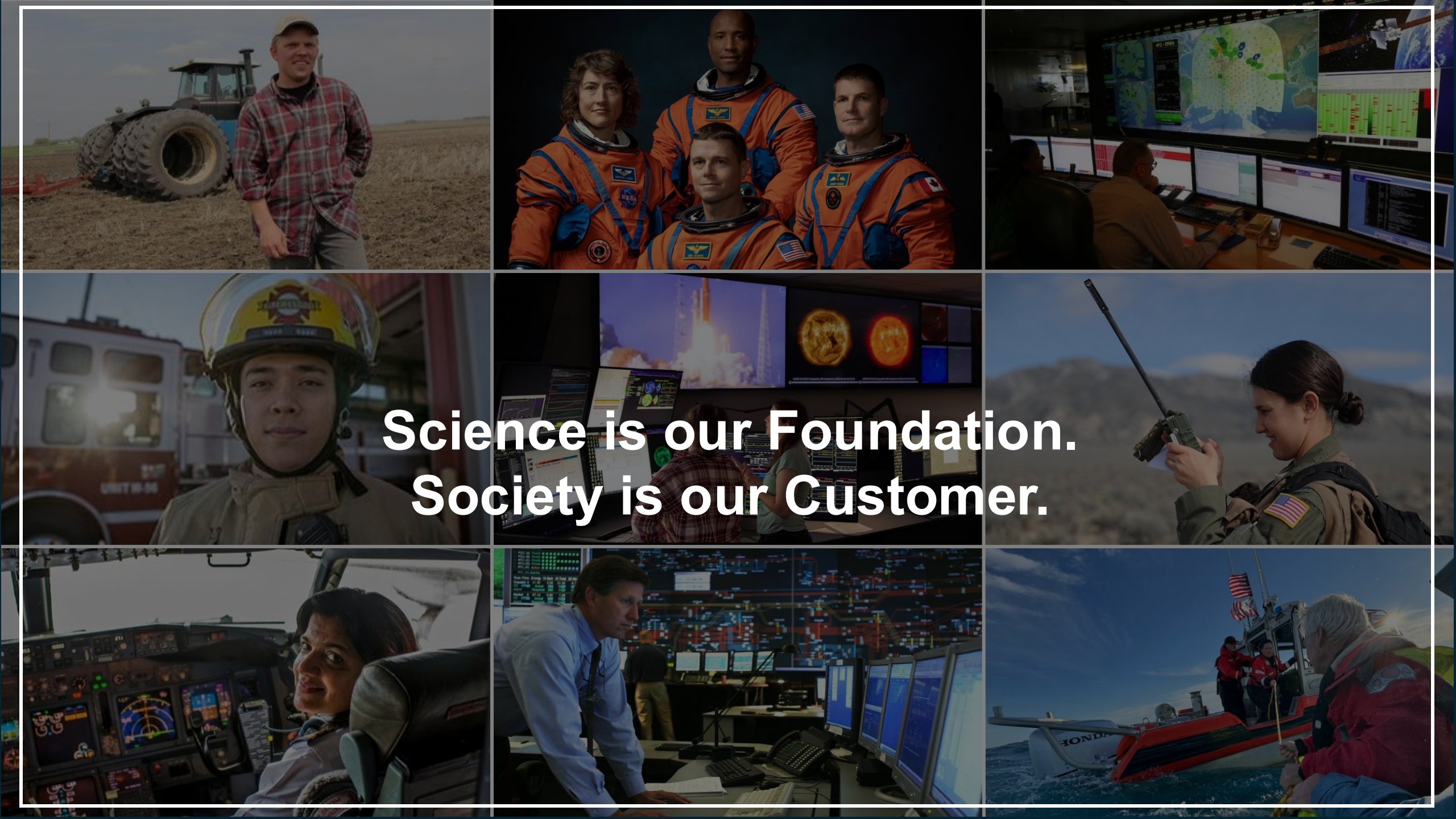
SMD Heliophysics Perspectives

Asal Naseri
NASA Heliophysics Division, Associate Director for Flight

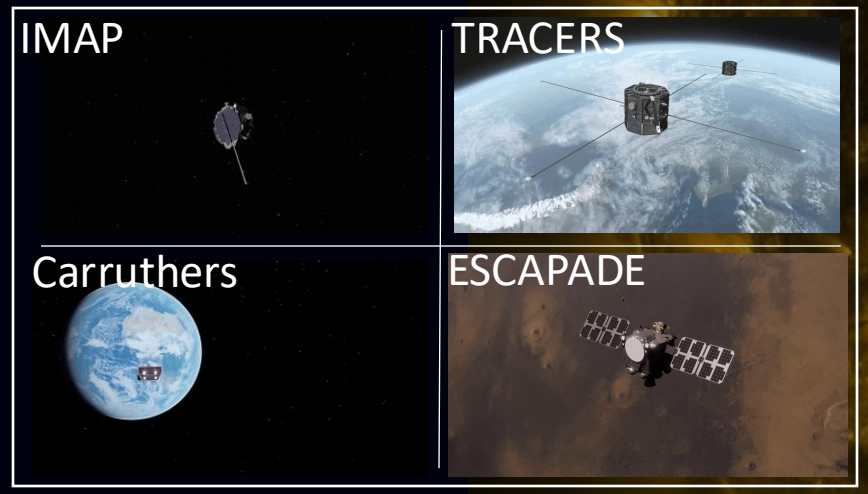
Aug. 25, 2026




Launching Dreams


Science is our Foundation.
Society is our Customer.

Heliophysics Portfolio



Missions



Sounding Rockets



H-FORT CubeSats

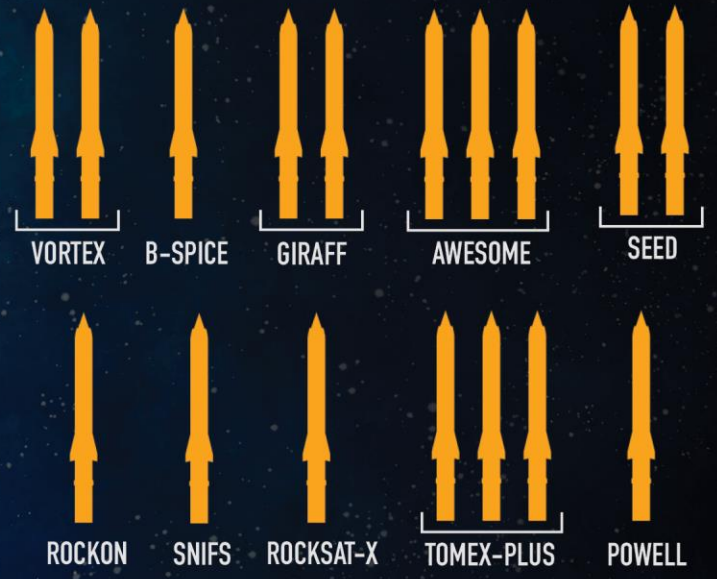
HELIOPHYSICS 2025

National Aeronautics and Space Administration

7 MISSIONS LAUNCHED
13 SPACECRAFT + 1 INSTRUMENT



10 SOUNDING ROCKET CAMPAIGNS WITH 17 ROCKETS

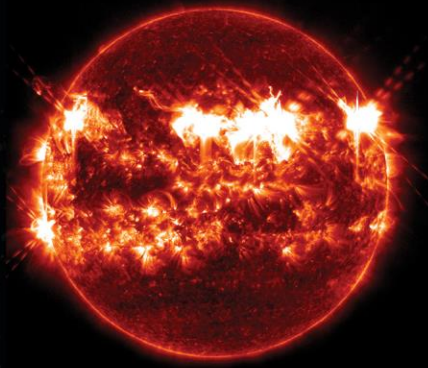


3 CUBESATS DEPLOYED

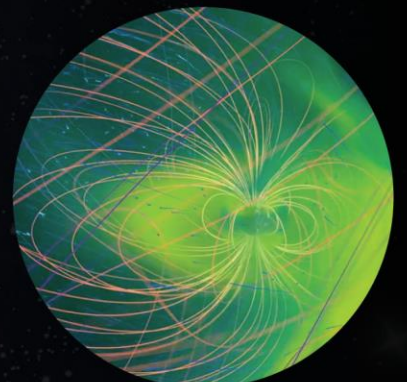


415 SOLAR FLARES
INCLUDING 17 X-CLASS FLARES AS OF DEC 8

A blended composite image of all six X-class flares from November 2025



22 GEOMAGNETIC STORMS



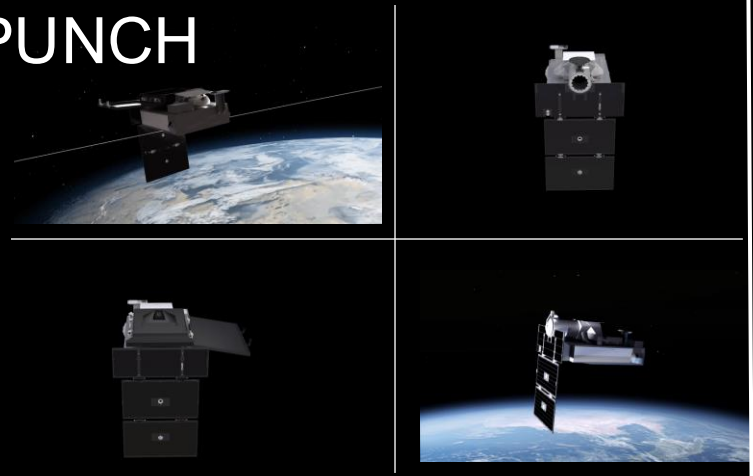
The most powerful geomagnetic storm of the year was a G4 recorded on November 12

Heliophysics

SmallSat

Missions

PUNCH



EZIE



TRACERS



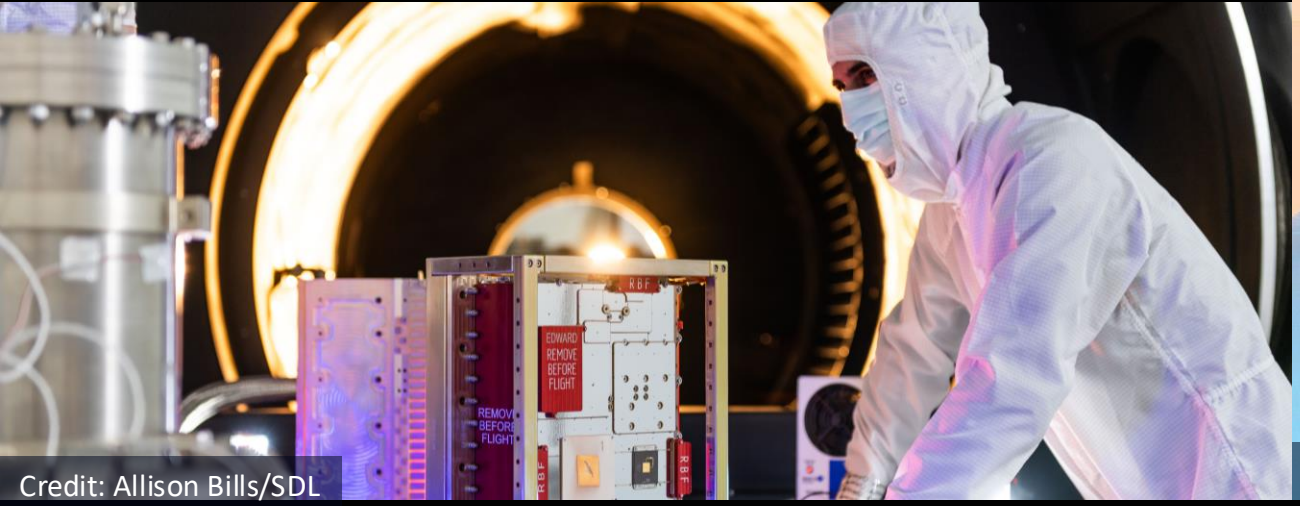
ESCAPADE



H-FORT
CubeSats



NASA



Credit: Allison Bills/SDL


Credit: Allison Bills/SDL

SUNRISE

SUN RADIO INTERFEROMETER SPACE EXPERIMENT

Six 6U CubeSats will observe solar radio wavelengths invisible from Earth.

The spacecraft will orbit within 6 miles of each other above Earth's atmosphere and will function as a single-aperture radio telescope.



H-FORT CubeSats

SunCET will take pictures of the sun in extreme ultraviolet light

CubIXSS will study the origins of hot plasma in solar flares and active regions

WindCube will study the influence of thermospheric winds on the earth's ionosphere

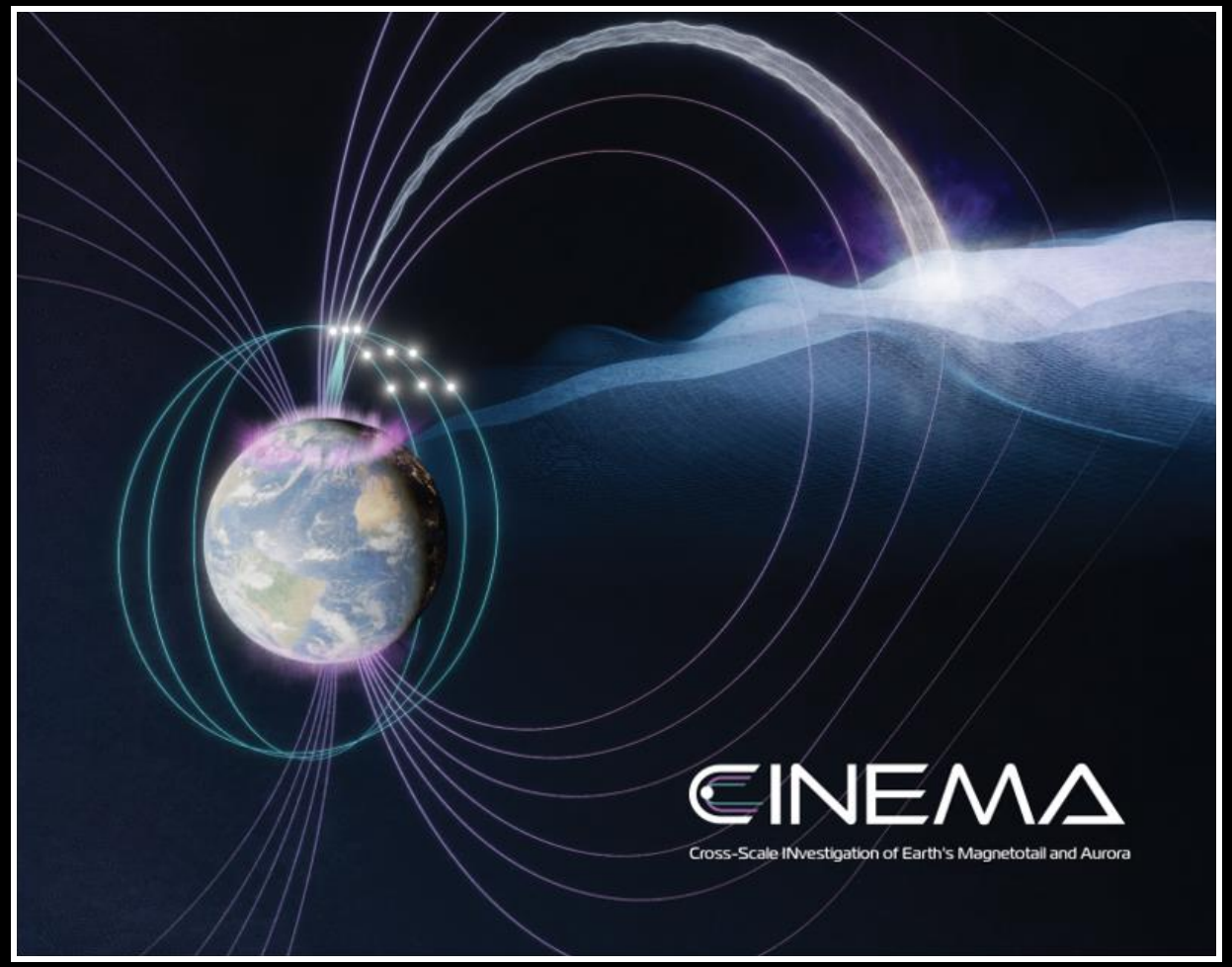


Sounding Rockets

Image: BADASS sounding rocket launched Jan. 10, 2026, from Poker Flats, Australia into an aurora.

Launching in 2026: SDO EVE, MaGIXS-3

Cross-scale Investigation of Earth's Magnetotail & Aurora Mission



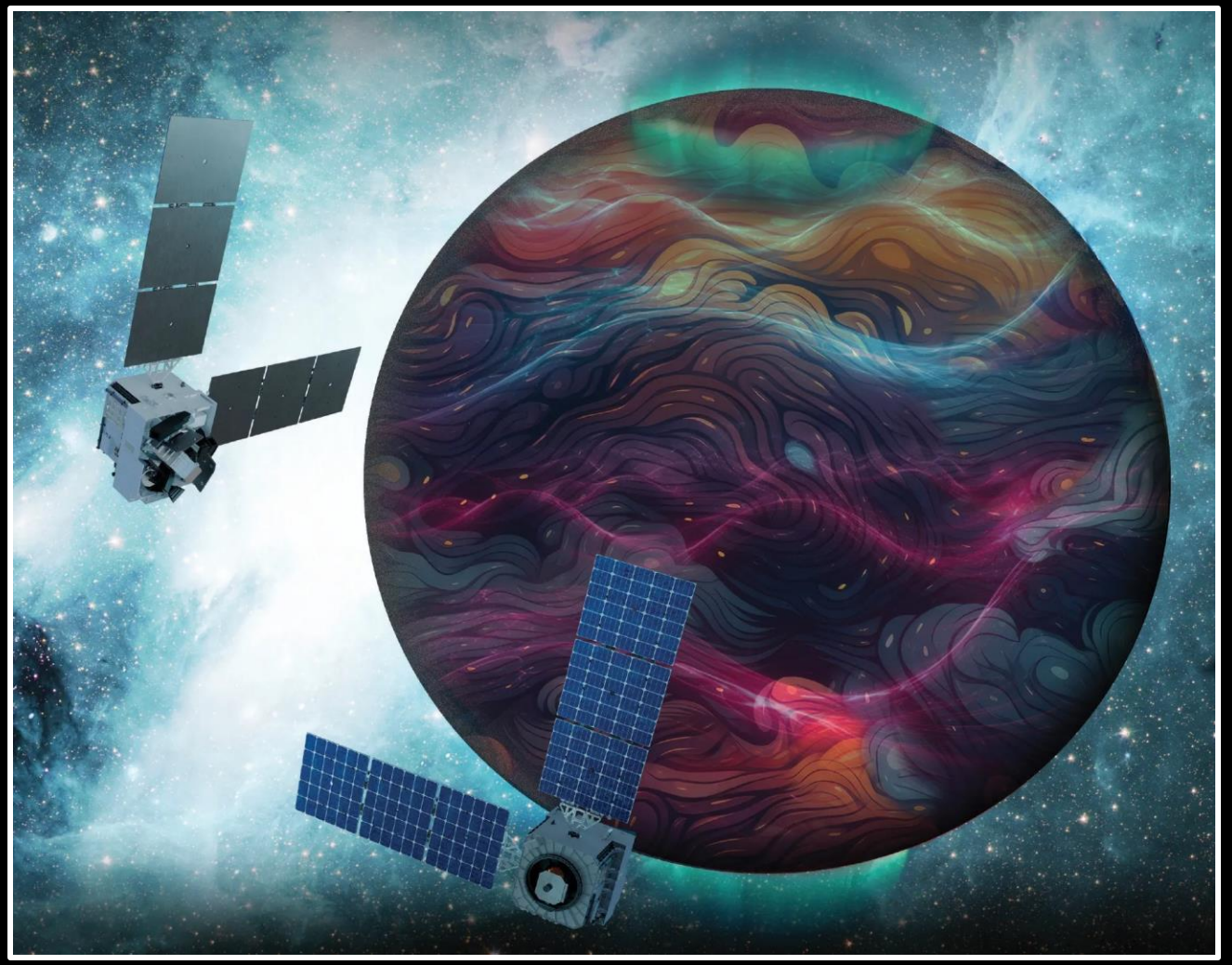
The CINEMA mission's constellation of **nine small satellites** will investigate how solar wind energy flows into Earth's magnetosphere and triggers auroras using a combination of instruments — an energetic particle detector, an auroral imager, and a magnetometer — on each spacecraft.

Identical twin satellites will study how changes in Earth's lower atmosphere influence our planet's upper atmosphere, where space weather is manifested.

DAPHNE Mission

Dynamic Atmosphere-Ionosphere Explorer

Low-risk high-return mission concept that will provide coordinated, multi-point measurements of neutral winds, temperature, and composition in the thermosphere.



Credit: Laboratory for Atmospheric & Space Physics/Mary Tostanoski

GDC Trailblazer is a rapid, proof-of-concept mission that will demonstrate a cost-effective approach for getting science to space faster.

GDC Trailblazer

Geospace Dynamics Constellation

GDC will use multiple spacecraft to provide measurements key to understanding how space weather impacts spacecraft operating in low Earth Orbit (LEO).



Insights gained from GDC will directly inform new modeling & prediction capabilities for orbital drag, spacecraft charging, & high frequency communications.



Enabling Human Exploration

NASA's Artemis II astronauts: Mission Specialist Jeremy Hansen (CSA), Pilot Victor Glover, Commander Reid Wiseman & Mission Specialist Christina Koch