Launch Campaign	Launch Provider	Mission Name	Launch Date	Deployment Status	Rocket	Mission Description	Payload(s)	Organization(s)
CRS-26	ELaNa 49	MARIO (Measurement of Actuator Response and Impedance on Orbit)	11/26/22		Falcon 9	This 3U technology demonstration will characterize the performance of piezoelectric actuators in low-Earth orbit conditions to ultimately study the behavior and degradation of macro-fiber composite materials under actuation and structural health monitoring configurations.	Piezoelectric actuators	University of Michigan, Ann Arbor
CRS-26		petitSat (Plasma Enhancements in The Ionosphere-Thermosphere Satellite)	11/26/22		Falcon 9	A 6U CubeSat mission aims to study density irregularities in the mid and low-latitude ionosphere as a precursor to a possible Explorer-class mission.	Ion-Neutral Mass Spectrometer and Gridded Retarding Ion Drift Sensor	NASA Goddard Space Flight Center, Utah State University and Virginia Tech
CRS-26		SPORT (Scintillation Prediction Observations Research Task)	11/26/22		Falcon 9	This is a 6U mission that will explore space weather in the ionosphere to understand what drives the formation of dense plasma bubbles that bloom over the equator and tropics at night.	Ion Velocity Meter (cu-IVM), GPS Radio Occultation (Compact Total Electron Content Sensor), Electric Field Probe (EFP), Langmuir Probe, Swept Impedance Probe (SIP), Magnetic Field Probe (Fluxgate)	NASA Marshall Space Flight Center, The Brazilian Space Agency, University of Texas at Dallas, The Aerospace Corporation, Utah State University
CRS-26		TJREVERB (Thomas Jefferson High School for Science and Technology Research and Education Vehicle for Evaluating Radio Broadcasts)	11/26/22		Falcon 9	A fully educational mission, this 2U CubeSat aims to study the use of iridium as a primary radio communication method and demonstrate using a passive magnet onboard and the Earth's magnetic field for stabilization rather than using an attitude determination and control system for pointing accuracy and stabilization for iridium.	Full duplex ultra high frequency (UHF) downlink and very high frequency (VHF) uplink transceive	Thomas Jefferson High School for Science and Technology
Artemis I	SLS	BioSentinel	11/16/22	Deployed	Space Launch System (SLS)	Primary objective of this 6U mission is to use a biosensor using a simple model organism (yeast) to detect, measure, and correlate the impact of space radiation to living organisms over long durations in heliocentric orbit.	BioSensor	NASA Ames Research Center
Artemis I		Near Earth Asteroid Scout	11/16/22	Deployed	Space Launch System (SLS)	This reconnaissance 6U CubeSat mission wil rendezvous an asteroid using a solar sail propulsion; mapping the asteroid by observing its position in space, the asteroid's shape, rotational properties, spectral class, local dust and debris field, regional morphology and regolith properties.	High resolution science-grade monochromatic camera	Jet Propulsion Laboratory and NASA Marshall Space Flight Center
CRS-25	ELaNa 45	JAGSAT-1	7/14/22		Falcon 9	A 2U cubesat scientific investigation mission, JAGSAT-1 will measure plasma electron density at submeter level resolution to resolved measurements of plasma density irregularities in the ionosphere.	Time Domain Impedance Probe (TDIP)	University of South Alabama, Mobile
CRS-25		JAGSAT D3 (Drag De-Orbit Device) 1	7/14/22		Falcon 9	This technology demonstration mission will test a device that can guide small satellites from low Earth orbit, maneuvering them through Earth's atmosphere, where they burn up.	Drag device	Embry-Riddle Aeronautical University
CRS-25		CLICK A (CubeSat Laser Infrared CrosslinK A)	7/14/22		Falcon 9	CLICK A is a risk reduction mission that will test out elements of the optical (laser) communications and demonstrate the fine steering mirror control system's high precision pointing performance. This will enable the use of a lower power laser in CLICK B/C, the second mission slated for launch mid-2023.	Miniaturized optical transmitter	Massachusetts Institute of Technology, University of Florida, NASA ARC
CRS-25		CapSat-1	7/14/22		Falcon 9	This 1U mission intends to advance the current industrial standard for a CubeSat's EPS by validating a novel capacitor developed by Maxwell Technologies.	Capacitor	The Weiss School
CRS-25		Beavercube	7/14/22		Falcon 9	3U CubeSat will strive obtain medium-resolution images of global forest canopies with spectral resolution of 10 nm across the visible and near-infra-red	Two FLIR Boson Long-Wave Infrared (LWIR) cameras and one MatrixVision BlueFox Visible Spectrum (VIS) camera.	Massachusetts Institute of Technology (MIT)
ASTRA – Rocket 3.3	Commerical Provider	TROPICS-1 (Time-Resolved Observations of Precipitation Structure and Storm Intensity with a Constellation of SmallSats)	6/12/22	Launch failure	Astra Rocket-3.3	This mission initially consisted of six 3U cubesats to provide improved time-resolved observations of tropical cyclones compared to traditional observing methods. TROPICS-1 consisted of two 3U cubesats that failed to reach orbit.	High-performance radiometer	MIT Lincoln Laboratory, NASA GSFC
STP-S28A	Commerical Provider	NACHOS -2 (Nano-satellite Atmospheric Chemistry Hyperspectral Observation System)	7/2/22	Deployed	LauncherOne	The NACHO mission will allow scientists to detect, map, and quantify Earth's dilute trace gases more easily, which is critical for learning more about everything from volcanology to climate change. The NACHO mission is comprised of two 3U cubesat demonstrations (NACHOS-1 and NACHOS-2) to help researchers determine whether constellations of CubeSat-like small satellites could gather and process high-resolution imaging data as efficiently as larger, single-platform satellites.	Offner-type hyperspectral imager	Los Alamos National Lab
STP-S28A	ELaNa 39	GPX2	7/2/22	7/2/22	LauncherOne	This is a 3U technology demonstration mission to evaluate the performance of commercial off-the-shelf (COTS) GPS receivers, IRIDIUM Short-Burst Data command/telemetry communication architecture, and the use of a composite additive-manufactured Windform XT 2.0 chassis for the 3U form factor CubeSat.	Differential global positioning systems (dGPS)	NASA's Langley Research Center, The Aerospace Corporation
STP-S28A		CTIM-FD (Compact Thermal Irradiance Monitor-Flight Demonstration)	7/2/22	7/2/22	LauncherOne	This 6U CubeSat mission will spend one year in orbit to see if smallsats can be as effective at measuring total solar irradiance (TSI) as larger sensors like the total irradiance monitor (TIM) instrument used aboard the SORCE and TSIS-1 missions.	Compact Total Irradiance Monitor with Vertically Aligned Carbon Nanotube (VACNT) bolometers	University of Colorado Boulder / LASP,
Rocket Labs – Electron Rocket	Commerical Provider	CAPSTONE (Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment)	6/28/22	Deployed	Electron	A demonstration mission, this 12U CubeSat will verify the dynamics of the near rectiliniear halo orbit around the Moon for at least six months.	Flight computer and radio, Cislunar Autonomous Positioning System (CAPS™)	NASA, Advanced Space, Terran Orbital Corporation and Stellar Exploration
SpaceX Transporter-5	Commerical Provider	PTD-3 (Pathfinder Technology Demonstrator 3) TBIRD	5/25/22	Deployed	Falcon 9	This 6U CubeSat carries the TeraByte InfraRed Delivery (TBIRD) system that will demonstrate high-data-rate capabilities of laser communications from a CubeSat in low-Earth orbit	TeraByte InfraRed Delivery (TBIRD) system	NASA's Goddard Space Flight Center, Ames Research Center, JPL, MIT
SpaceX Transporter-5	Commerical Provider	CPOD (CubeSat Proximity Operations Demonstration)	5/25/22	Deployed	Falcon 9	CPOD mission consists of two 3U CubeSats that will demonstrate precision circumnavigation and docking ultimately validating and characterizing many new miniature low-power proximity operations technologies applicable to future missions.	Docking device, imaging sensors	NASA's Ames Research Center
NG-17 Resupply	ELaNa 44	NACHOS-1 (Nano-satellite Atmospheric Chemistry Hyperspectral Observation System)	2/19/22	6/30/22	NG-17 Antares	The NACHO mission will allow scientists to detect, map, and quantify Earth's dilute trace gases more easily, which is critical for learning more about everything from volcanology to climate change. The NACHO mission is comprised of two 3U cubesat demonstrations (NACHOS-1 and NACHOS-2) to help researchers determine whether constellations of CubeSat-like small satellites could gather and process high-resolution imaging data as efficiently as larger, single-platform satellites.	Offner-type hyperspectral imager	Los Alamos National Lab
VCLS Demo-2A	ELaNa 41	BAMA-1	2/10/22	Launch failure	Astra Rocket-3.3	A technology demonstration mission, BAMA-1 was going to conduct a flight demonstration of a drag sail module by rapidly deorbiting the satellite.		University of Alabama, Tuscaloosa
VCLS Demo-2A		INCA (Ionospheric Neutron Content Analyzer	2/10/22	Launch failure	Astra Rocket-3.3	This mission aimed to study the latitude and time depen-dencies of the neutron spectrum in low-Earth orbit for the first time to improve current space weather models and mitigate threats to space and airborne assets. The importance of this mission is to enable a better understanding of the neutron spectrum in low earth orbit, as the data received is currently limited to that from high altitude balloons.	Silicon Photomultiplier (SiPM) based neutron detector	New Mexico State University, Las Cruces, University of New Hampshire, and NASA's Goddard Space Flight Center
VCLS Demo-2A		QubeSat	2/10/22	Launch failure	Astra Rocket-3.3	The primary goal of this project was to use a 2U "Quantum" cubesat to rest and qualify a quantum gyroscope developed by researchers at UC Berkeley in low Earth orbit conditions.	Quantum Gyroscope	University of California, Berkeley, Space Science Laboratory
VCLS Demo-2A		R5-S1	2/10/22	Launch failure	Astra Rocket-3.3	This mission intended to demonstrate a fast and cost-effective way to build successful CubeSats in addition to demonstrating some technologies that are important to in-space inspection, which could help to make crewed space exploration safer and more efficient.		NASA's Johnson Space Center
STP-27VPB	ELaNa 29	PAN (Pathfinder for Autonomous Navigation)	1/13/22		LauncherOne	This project is a technology demonstration to launch two 3U CubeSats that will autonomously rendezvous and dock in low-Earth orbit. If successful, the technology demonstrated by PAN will reduce the mass and complexity associated with traditional rendezvous and docking systems.	An autonomous control algorithms for rendezvous and docking maneuvers; low-power reconfigurable magnetic docking technology; and compact, lightweight and inexpensive precision relative navigation using carrier-phase differential (CD) PS.	Cornell University, NASA's Langley Research Center