

Agency Priority Goal | Action Plan | FY 2024 – 2025

Artemis

FY 2024 Q2 Update

Goal Leader(s):

Goal Leader: Amit Kshatriya, Deputy Associate Administrator
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Goal Overview

Goal statement

- Advance America's goal to land the first woman and the first person of color on the Moon and pursue a sustainable program of exploration, support scientific discovery, and demonstrate capabilities that advance lunar exploration.
- By September 30, 2025, NASA will Launch Artemis II, the first crewed Artemis mission. Additionally, NASA will demonstrate a key enabling technology by completing an on-orbit propellant transfer test in preparation for Artemis III and it will deliver other key capabilities to enable deep space exploration.

Problem to Be Solved

- Successfully execute long-duration space exploration missions – to the Moon and then on towards Mars – to support scientific investigation while developing new commercial launch capabilities, launch vehicles, spacecraft, and a lunar lander.

What Success Looks Like

- Launch Artemis II, the first crewed mission on NASA's path to establishing a long-term presence at the Moon for science and exploration through Artemis.
- Complete the Human Landing System (HLS) Option A (SpaceX) Propellant transfer flight test to support Artemis III
- Deliver key capabilities to enable deep space exploration

Goal Target(s)

Repeat and further describe the key indicators included in the goal statement (previous slide) that will be used to track progress.

Please update these columns each quarter.

	Achievement statement	Key indicator(s)	Quantify progress*					Frequency
			We will...	Name of indicator (units in parentheses)	Start value	As of (Date)	Target value	Current value
1	<i>Launch Artemis II</i>	Launch Artemis II	0	10/1/23	100%	50%	05/31/24	quarterly
2	<i>Complete an on-orbit propellant transfer test in preparation for Artemis III</i>	Propellant Transfer Test in preparation for Artemis III	0	10/1/23	100%	0	05/31/24	quarterly
3	<i>Deliver key capabilities to enable deep space exploration</i>	Deliver key capabilities to enable deep space exploration	0	10/1/23	100%	0	05/31/24	quarterly

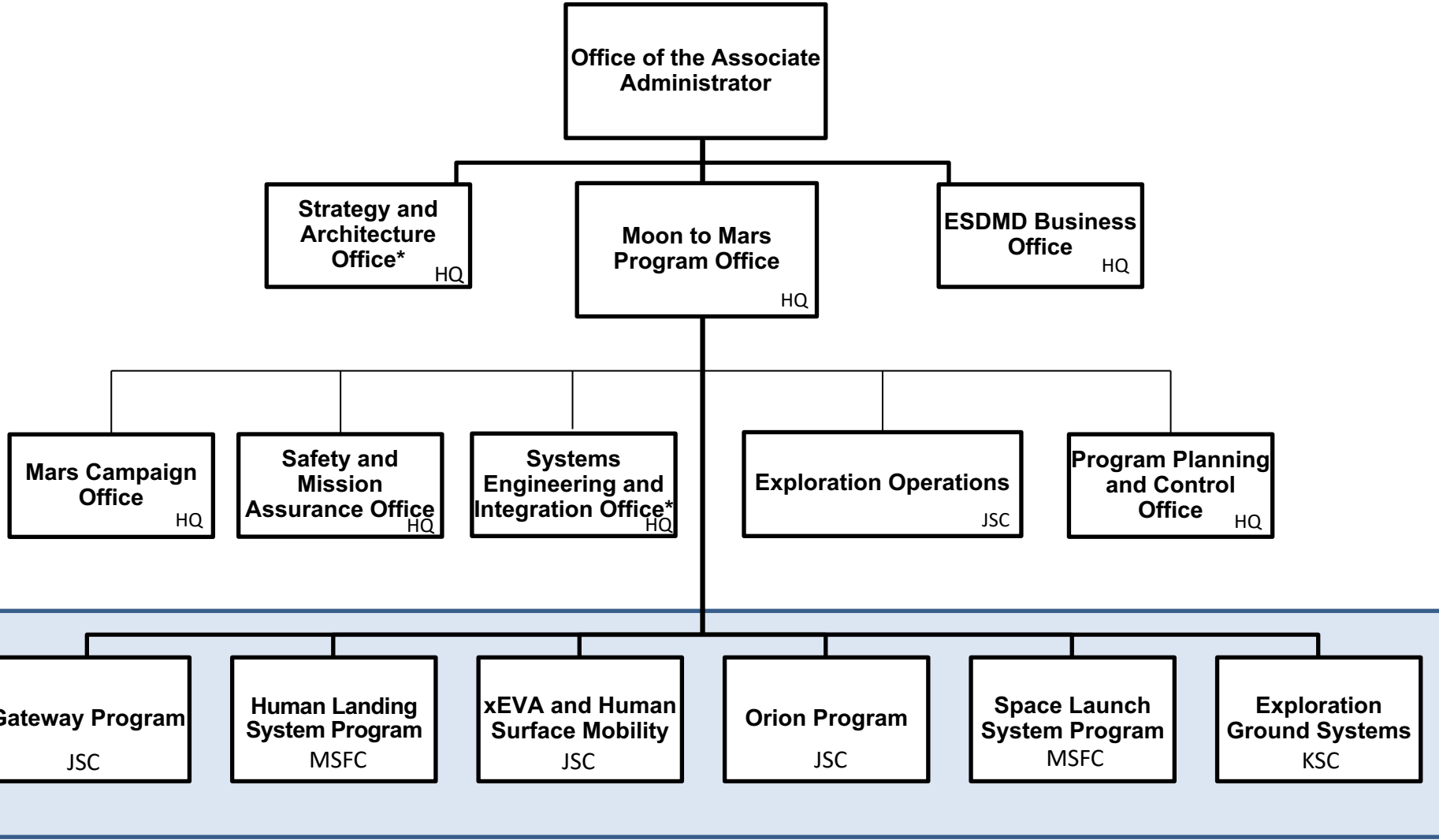
* Even qualitative targets! If the target is to achieve a qualitative outcome, quantify progress this way: 1="Yes, we achieved it", 0="No, not yet"

Narrative – FY 2024, Quarter 2

The programs in the **Moon to Mars Program Office (M2MPO)** completed key milestones:

- In support of launching Artemis II, the Crew and Service Module (CSM) continues to undergo various testing. Recently the CSM spacecraft began the Electromagnetic Interference (EMI)/Electromagnetic Compatibility (EMC) integrated vehicle level testing. Against the FY 2024 Q2 milestone, “Deliver the SLS Booster Segments for Artemis II to Kennedy Space Center,” all solid rocket booster segments, aft skirts, nozzle extensions, and struts have been delivered to KSC and flight processing is underway. Launch Vehicle Stage Adaptor (LVSA) is integrated and in storage ready for delivery to EGS. Interim Cryogenic Propulsion Stage (ICPS) is in storage cell and hardware acceptance review complete. Core stage engines are installed, and final integrated function testing is complete. Progress continues on the Mobile Launcher refurbishments integral to Artemis II launch activities.
- Against the remaining FY 2023 milestone, Complete Artemis II Booster Segment Stacking, this milestone remains on target for completion in FY 2024.
- SpaceX conducted the third Starship-Super Heavy transportation system flight test, launching from Boca Chica, Tx on March 14, 2024, furthering capabilities needed for Artemis III+. During the coast phase, SpaceX demonstrated the transfer of cryogenic liquid oxygen between two Starship propellant tanks in accordance with a Space Technology Mission Directorate (STMD) contract milestone.
- NASA recently selected Intuitive Machines, Lunar Outpost, and Venturi Astrolab to advance capabilities for a lunar terrain vehicle (LTV).
- Human Lander System (HLS) Program and Extravehicular Activity and Human Surface Mobility Program (EHP) conducted separate SpaceX and Blue Origin technical interchange meetings (TIMs) with the Pressurized Rover (PR) team to exchange information about the designs, features, operations concepts, environments, interfaces, power and data constraints and needs, and payload integration processes associated with the HLS-derived Human-class Delivery Landers (HDL) and the PR.
- NASA and Japan signed an Implementing Arrangement (IA) under which Japan will design, develop, and operate a pressurized rover for crewed and uncrewed exploration on the Moon.

Goal Team

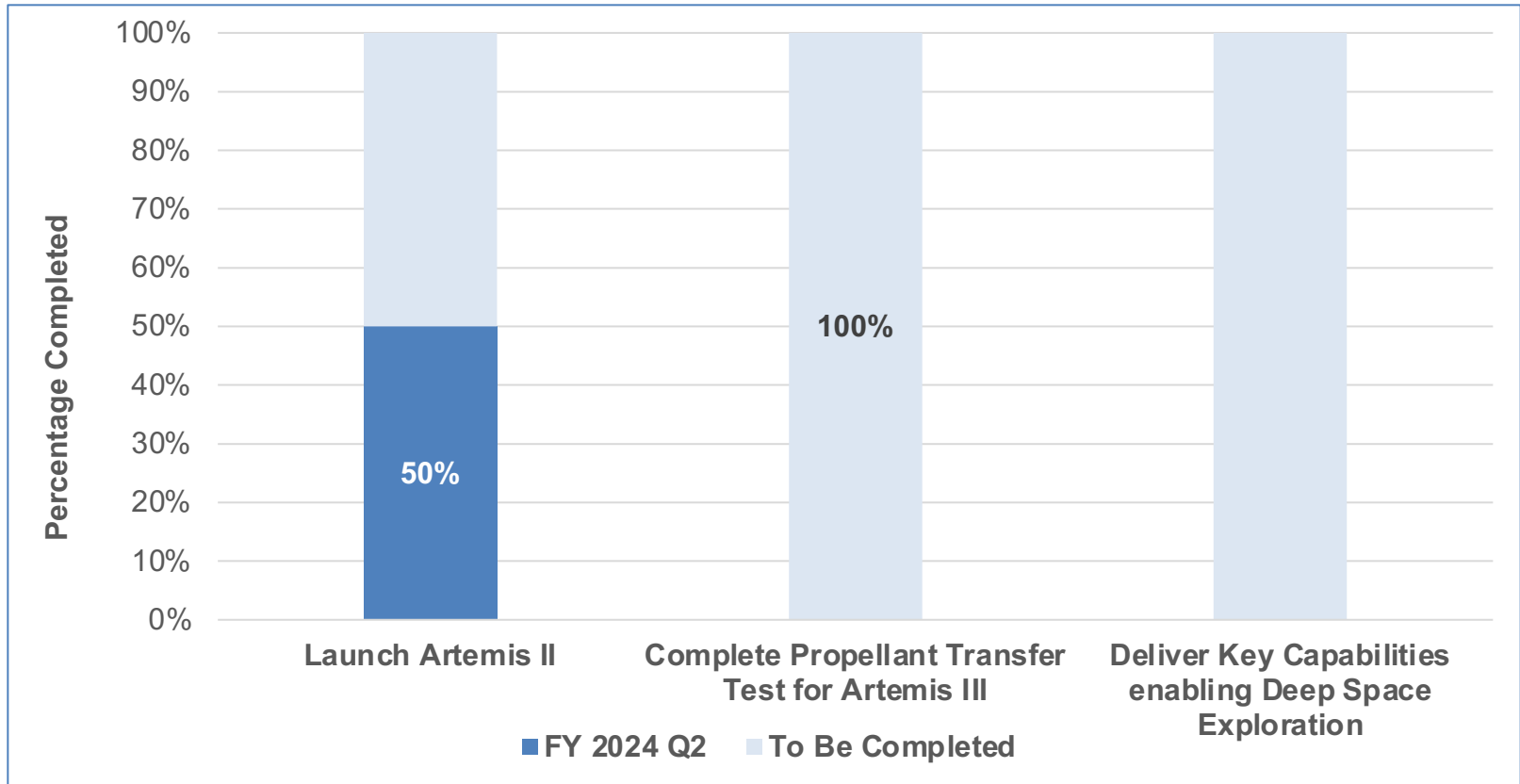


*Strategy and Architecture and SE&I have direct integration with SMD and STMD

Goal Strategies

- The Moon to Mars Program Office will systematically progress through major qualification, testing, and production milestones to ensure the success of the Space Launch System (SLS) and Orion spacecraft on Artemis II (crewed test flight) and Artemis III (crewed mission to the lunar surface).
- The Moon to Mars Program Office will continue to use innovative procurement and management approaches to develop the core capabilities [Gateway, Human Landing System (HLS), and xEVA & Human Surface Mobility (EHP)] needed to conduct the lunar surface missions and enable multiple launch options for lunar missions.
- The M2MPO will maintain a mission focus, pulling systems together to accomplish a campaign of missions, adopt an incremental development framework that formalizes a series of capabilities that are integrated into the overall architecture, and use rigorous systems engineering practices to include setting the “right” requirements using iterative analysis cycles to mature the technical baseline.
- The M2MPO Artemis Integration Framework, led by the M2MPO integration offices (System Engineering & Integration, Safety & Mission Assurance, Exploration Operations, and Program Planning & Control) will take advantage of lessons learned as well as establish clear roles and responsibilities and accountability to enable cross program integration.

Key Indicators



Key Milestones

Milestone Summary					
Key Milestone	Milestone Due Date	Milestone Status	Change from last quarter	Owner	Comments
Deliver the SLS Booster Segments for Artemis II to Kennedy Space Center	FY24 Q1	<i>Complete</i>	<i>N/A</i>	SLS	<i>Solid rocket booster segments, aft skirts, nozzle extensions, and struts, have been delivered to KSC in and flight processing continues.</i>
Hold the second Artemis III Integrated Sync Review	FY24 Q2	<i>Delayed</i>	<i>N/A</i>	Moon to Mars	<i>Artemis III Integrated Sync Review has been moved to FY24 Q4</i>
Conduct the Preliminary Design Review (PDR)- Informed Sync Review for xEVAs (Suits) from the Extravehicular Activity and Human Surface Mobility Program (EHP)	FY24 Q3	<i>On track</i>	<i>N/A</i>	EHP	<i>Preliminary Design Review (PDR)- Informed Sync Review kicked off in April 2024 and closure board planned for June.</i>
Deliver Gateway HALO Habitable Element, a platform supporting cislunar investigation and staging area for landing investigations on lunar surface	FY24 Q4	<i>Delayed</i>	<i>N/A</i>	Gateway	<i>Delivery of the Gateway HALO Habitable Element is delayed.</i>
Begin Vehicle Assembly Building (VAB) High Bay 4 Payload Environmental Access Room (PEAR) Design	FY25 Q1	<i>On track</i>	<i>N/A</i>	EGS	<i>Scheduled to start in October 2024, with a target completion date in June 2025.</i>
Complete Artemis III SLS Launch Vehicle Stage Adapter (LVSA)	FY25 Q2	<i>On track</i>	<i>N/A</i>	SLS	<i>LVSA is in final phase of integration and assembly with installation of flight instrumentation and acoustic blankets.</i>
Complete HLS Option A/SpaceX Propellant Flight Transfer technology test, a key enabling technology for future exploration	FY25 Q3	<i>On track</i>	<i>N/A</i>	HLS	<i>SpaceX on-orbit demo of the transfer of cryogenic propellant between tanks on a single Starship was performed on the Integrated Flight Test / Orbital Flight Test #3 on March 14. Propellant Transfer Demo Flight System Review completed in April. Ship-to-Ship propellant transfer demo target completion FY25 Q1.</i>
Conduct the Critical Design Review (CDR)- Informed Sync Review for xEVAs (Suits) from the Extravehicular Activity and Human Surface Mobility Program (EHP)	FY25 Q4	<i>On track</i>	<i>N/A</i>	EHP	<i>CDR Informed Sync Review for xEVAS is scheduled for February 2025.</i>

Data Accuracy & Reliability

Verification and Validation:

- NASA monitors and tracks its progress towards this goal using various Agency documents and reports, including Directorate Program Management Council materials, Quarterly Program Status Report packages, project schedules, and other program-internal documents.

Data Source(s):

- Program documents (produced primarily by NASA) indicating whether or not NASA has met its major quarterly development milestones, such as Baseline Performance Review presentation. Results and data sources available publicly in press releases and external reporting progress toward major development milestones.

Level of Accuracy Required for Intended Use:

- Using the documents and reports referenced above, the Agency is able to accurately report at the end of each quarter on whether or not it has met its planned milestones.

Data Limitations:

- NASA has not identified any data limitations that would preclude it from reporting accurate, reliable, and timely performance information.

How the Agency Compensates for Data Limitations:

- Not applicable.

Additional Information

Contributing Programs:

Organizations:

- NASA, European Space Agency, Canadian Space Agency, Japan Aerospace Exploration Agency, Mohammed Bin Rashid Space Centre

Program Activities:

- The principal contributors to these goals are the Moon to Mars Program Office, which manages the Orion, Space Launch System (SLS), Gateway, Human Landing System (HLS), xEVA and Human Surface Mobility (EHP), Exploration Ground Systems (EGS) programs, and the Mars Campaign Office.
- Other NASA organizations that contribute to the goal include the SOMD Space Communications and Navigation, Rocket Propulsion Test, and both the Space Technology and Science Mission Directorates.

Other Federal Activities:

- Other federal contributors include the United States Air Force, United States Navy, United States Army, National Space Council, and the United States Space Force. NASA also conducts tests at Department of Defense facilities.

Stakeholder / Congressional Consultations

- NASA provides regular status updates to Congress, including quarterly reports on Program/project funding. NASA also provides regular progress briefings to Congressional staff.
- NASA supports regular audits by the Government Accountability Office (GAO) as part of both the annual “Assessment of Major Projects” report and other focused reviews.
- NASA provides status updates to the Aerospace Safety Advisory Panel and the NASA Advisory Council.