Guide to the Artemis II Lunar Targeting Plan

The Artemis II Lunar Targeting Plan (LTP) provides the timeline and science and operational objectives for the Artemis II crew to execute during the lunar flyby.

As of April 5, the scheduled times for this activity are:

- Start / End of flyby activities: April 6 2:45 p.m. EDT / April 7 p.m. 9:20 EDT
- Earthset / Earthrise: April 6 6:45 p.m. EDT / April 6 p.m. 7:25 EDT
- Closest approach to the Moon: April 6 7:02 p.m. EDT

The following list is a plan developed by the science team and reviewed by the crew. The Artemis II astronauts have the autonomy to make changes according to mission needs and their judgment. The exact time, nature, and completeness of their science activities and mission events is subject to change.

Suggested Activity/Target	Science and Operational Focus
Discussion: Warm up	Welcome to the Moon! Help orient each other using major landmarks.
Discussion: Nearside/Farside	Compare and contrast the appearance (color, albedo, topography, and texture) of mare and rayed craters on the nearside and farside.
Crater Duo: Gluskho	Comparative observations of two high albedo, complex craters (Glushko and Ohm) to understand how crater ray systems evolve with time. First of two photometric observations of Glushko.
Crater Duo: Ohm	Small, complex crater with prominent ray system. Second of two craters in Crater Duo (Glushko, Ohm).
Aristarchus Plateau	Plateau known for its volcanic diversity and the bright Aristarchus crater, looking for color, albedo, and texture variations across the plateau and surrounding mare.
Reiner Gamma	Set of bright lunar swirls near highland-mare boundary. Future CLPS landing site.
Observing teams swap	
Whole Moon	Orient yourselves to the Moon and acquire a mosaic.
Orientale Basin	Youngest large basin on the Moon with dark impact melt interior, bright rings, and prominent ejecta with secondary crater chains.
Crew Choice	Focus on regions, patterns, or features that interest or stand out to crew using their training.
Discussion: Farside Albedo/Color	Discuss patterns and variations in regional albedo and color and their association with specific features (such as rayed craters Pierazzo or Byrgius A).
Observing teams swap	

Suggested Activity/Target	Science and Operational Focus
Glushko Crater	High albedo, complex crater with prominent ray system. Second of two photometric observations of Glushko for this crew shift to inform how changes in viewing conditions affect human perception of brightness, color, and texture.
Orientale Basin	Youngest large basin on the Moon with dark impact melt interior, bright rings, and prominent ejecta with secondary crater chains.
Hertzsprung Basin	Older, degraded multiring basin on the lunar farside to compare with the younger Orientale Basin.
Crew Choice	Focus on regions, patterns, or features that interest or stand out crew using their training.
Discussion: Terminator	Describe the topography, albedo, and color of features along or near the terminator, including eastern South Pole-Aitken Basin and Apollo Basin.
Observing teams swap	
Ohm Crater	Small, complex crater with prominent ray system.
Discussion: Limb	Describe the topography, albedo, texture, and color of limb features, including Orientale rings and central floor depression.
Earthset	Opportunity to address how perception of color on the Moon may change when Earth is in view.
Vavilov Crater	Complex crater with central peak and terraced walls.
Crew Choice	Focus on regions, patterns, or features that interest or stand out to crew using their training.
Impact Flashes	Opportunity to watch for short-lived flashes on the dark parts of the lunar surface caused by impact bombardment. Part of a Citizen Science campaign.
Lofted Lunar Dust	Opportunity to see whether lunar dust in the exosphere may be visible as it is backlit by Earth along the dark western limb.
Earthrise	Earth rises above the Moon's limb returning into view.
Break	
Sunset	As the sun is eclipsed by the Moon, observe the solar corona and the lunar horizon.
Discussion: Forward Look	Synthesize your scientific observations throughout the flyby and look forward to how your experience can inform future Artemis science operations.
Eclipsed Moon	The darkest vantage point where the only illumination on the Moon is Earthshine.
Deep Space	Observable Planets (Venus, Saturn, Mercury, Mars), zodiacal light.
Sunrise	As the sun emerges from behind the Moon, observe the solar corona and the lunar horizon.