

GRAIL moon mission in final preparations for September launch

August 26 2011, By DC Agle, Dwayne Brown and Caroline McCall



The payload fairing is added to the GRIL booster. Credit: NASA/KSC

NASA's Gravity Recovery And Interior Laboratory (GRAIL) mission to study the moon is in final launch preparations for a scheduled Sept. 8

launch from Cape Canaveral Air Force Station in Florida.

GRAIL's twin spacecraft are tasked for a nine-month mission to explore Earth's nearest neighbor in unprecedented detail. They will determine the structure of the [lunar interior](#) from crust to core and advance our understanding of the thermal evolution of the moon.

"Yesterday's final encapsulation of the spacecraft is an important mission milestone," said David Lehman, GRAIL project manager for NASA's Jet Propulsion Laboratory in Pasadena, Calif. "Our two spacecraft are now sitting comfortably inside the payload fairing which will protect them during ascent. Next time the GRAIL twins will see the light of day, they will be about 95 miles up and accelerating."

The spacecraft twins, GRAIL-A and GRAIL-B, will fly aboard a Delta II rocket launched from Florida. The twins' circuitous route to [lunar orbit](#) will take 3.5 months and cover approximately 2.6 million miles (4.2 million kilometers) for GRAIL-A, and 2.7 million miles (4.3 million kilometers) for GRAIL-B.

In lunar orbit, the spacecraft will transmit radio signals precisely defining the distance between them. Regional gravitational differences on the moon are expected to expand and contract that distance.

GRAIL scientists will use these [accurate measurements](#) to define the moon's [gravity field](#). The data will allow mission scientists to understand what goes on below the surface of our natural satellite.

"GRAIL will unlock lunar mysteries and help us understand how the moon, Earth and other [rocky planets](#) evolved as well," said Maria Zuber, GRAIL principal investigator from the Massachusetts Institute of Technology in Cambridge.

GRAIL's launch period opens Sept. 8 and extends through Oct. 19. On each day, there are two separate launch opportunities separated by approximately 39 minutes. On Sept. 8, the first launch opportunity is 8:37 a.m. EDT (5:37 a.m. PDT); the second is 9:16 a.m. EDT (6:16 a.m. PDT).

More information: To view live interviews with lunar scientists from noon to 5 p.m. EDT (2 p.m. PDT) on Sept. 8 and 9, visit:

www.livestream.com/grail .

Provided by JPL/NASA

Citation: GRAIL moon mission in final preparations for September launch (2011, August 26) retrieved 22 March 2023 from <https://phys.org/news/2011-08-grail-moon-mission-september.html>

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