

Last visit home for ESA's comet chaser Rosetta

October 20 2009



This is Rosetta, ESA's comet chaser. Credit: ESA (image by AOES Medialab)

ESA's Rosetta comet chaser will swing by Earth on 13 November to pick up orbital energy and begin the final leg of its 10-year journey to the outer Solar System. Several observations of the Earth-Moon system are planned before the spacecraft heads out to study comet 67/P Churyumov-Gerasimenko.

This will be the third Earth swingby, the last of Rosetta's four planetary gravity assists. Closest approach to Earth is expected at 08:45 CET. The swingby will provide exactly the boost [Rosetta](#) needs to continue into the [outer Solar System](#). The craft is scheduled for a close encounter with asteroid 21 Lutetia in July next year.

Rosetta is expected to arrive at its final destination in May 2014. There, it will release the Philae lander for in-situ studies on the surface. The spacecraft will then escort the [comet](#) on its journey toward the Sun, studying it closely for up to two years.

As it closes in on Earth next month, Rosetta will have travelled almost 4500 million km since launch. It will speed past [Earth](#) at 13.3 km/s, passing above the Indian Ocean at 109°E, 8°S, just south of the Indonesian island of Java. The gravity-assist will increase the spacecraft's speed by 3.6 km/s with respect to the Sun.

Instruments in action

While the swingby is critical for achieving the velocity required to reach its ultimate destination, the close encounter will also be used to study the Earth-Moon system from Rosetta's unique perspective.

Several instruments that usually hibernate during the long trek will be turned on in the week before the swingby.

Follow the swingby live

The Rosetta Blog will be updated regularly for this final planetary swingby. Follow crucial events live via the blog and the dedicated ESA Rosetta mission website.

Critical swingby events

Closest approach is scheduled for 08:45 CET on 13 November, but mission operators will perform a number of critical actions before and after the swingby to ensure that Rosetta is on the right trajectory.

One of the most important will be a trajectory correction manoeuvre (TCM), scheduled for 22 October at 13:30 CET. Results of this manoeuvre will be analysed to determine whether additional TCMs are required to achieve the correct approach trajectory.

Source: European Space Agency ([news](#) : [web](#))

Citation: Last visit home for ESA's comet chaser Rosetta (2009, October 20) retrieved 19 April 2024 from <https://phys.org/news/2009-10-home-esa-comet-chaser-rosetta.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.