German Aerospace Center

Timetable for comet landing on 12 November 2014 – Philae’s descent onto 67P/Churyumov-Gerasimenko

26 September 2014

In mid September, the site where the Philae lander will touch down on Comet 67P/Churyumov-Gerasimenko was selected – landing site 'J'. Now, there is a detailed timetable for the descent of Philae. The lander will undock from the Rosetta spacecraft at 09:35 CET on 12 November 2014 at a distance of approximately 22.5 kilometres from the centre of the comet and land on the surface about seven hours later. The landing will be controlled from the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) Lander Control Center (LCC) in Cologne. The first confirmation of the landing is expected at around 17:00 CET.

Signal travel time exceeds 28 minutes

In addition to the timetable for landing at the primary site, the engineers at the LCC have established, jointly with ESA, another schedule for the backup landing site – 'C'. If the engineers decide to use the backup site, Philae will undock from Rosetta at 14:04 CET on 12 November at a distance of only about 12.5 kilometres from the centre of the comet. In this case, the descent will only take about four hours. A first signal from the surface would be expected at about 18:30 CET. The signal travel time between Rosetta and Earth is 28 minutes and 20 seconds.

Final decision on 14 October

On 14 October 2014, the primary landing site and the schedule will be finally confirmed or a decision made to descend on the backup landing site. “Now we have a place and a detailed timetable for the first landing on a comet. Tension is mounting,” says DLR scientist Stephan Ulamec, Project Manager for the Philae lander.

The DLR LCC will be responsible for monitoring and controlling the Philae lander. All activities carried out by the probe have been prepared and tested on a ground reference model at the LCC. The duties of the LCC include the programming of the landing sequence, which runs from the separation from the Rosetta orbiter to touchdown on the comet. The commands for Philae and its 10 instruments will be sent from the control centre in Cologne to the European Space Operation Centre (ESOC) in Darmstadt, and from there via ground stations to Rosetta and Philae. The telemetry from Philae passes in the opposite direction via ESOC to the LCC.

The mission

Rosetta is an ESA mission with contributions from its member states and NASA. Rosetta's Philae lander is funded by a consortium headed by DLR, the Max Planck Institute for Solar System Research (MPS), CNES and the Italian Space Agency (ASI).

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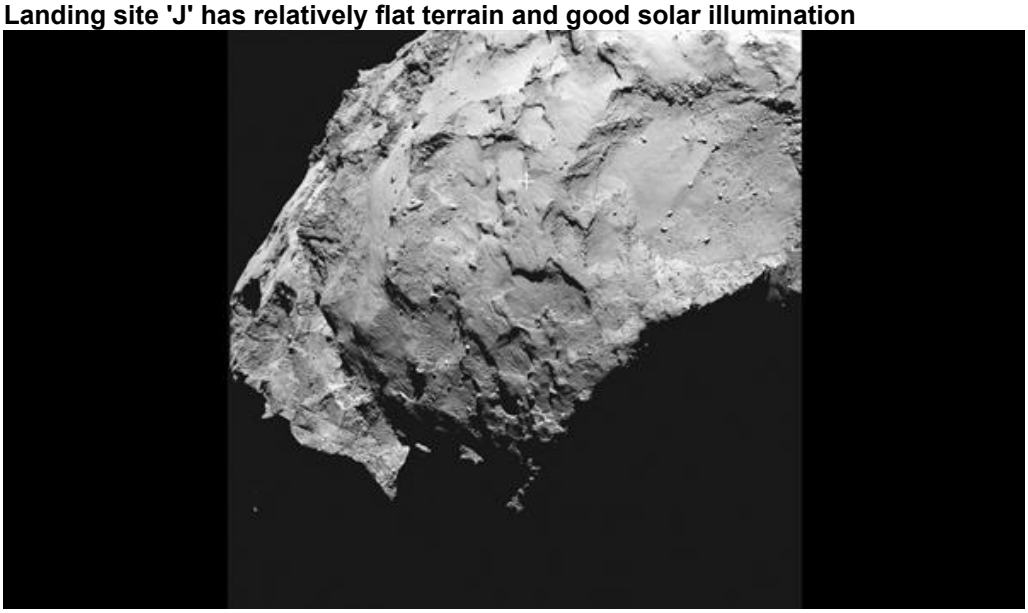
Landing site 'J' has relatively flat terrain and good solar illumination



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Credit: ESA/Rosetta/MPS for OSIRIS Team MPS/UPD/LAM/IAA/SSO/INTA/UPM/DASP/IDA.