Paris, 26 September 2014
PR116 - 2014
Press release

Philae comet landing set for Wednesday 12 November

The European Space Agency (ESA) has set Wednesday 12 November as the date for the landing of Philae on the surface of comet Churyumov-Gerasimenko. The lander will separate from the Rosetta orbiter at 9.35 CET and touch down some 7 hours later. Throughout its descent, reception of science data from Philae will be performed by CNES teams at the Science Operations and Navigation Centre (SONC) in Toulouse. CNES will be broadcasting this event in France with its partners.

Since the primary and back-up landing sites for Philae were selected two weeks ago at CNES's field centre in Toulouse, ESA and CNES spaceflight dynamics teams have been closely analysing possible descent trajectories for both envisioned sites.

Two landing scenarios have been identified, one for Site J (primary) on the comet's 'head' and the other for Site C (back-up) on its 'body'.

If Site J is confirmed as the primary location, **Philae will separate from the Rosetta orbiter at 9.35 CET** at a distance of 22.5 km from the comet's nucleus and land 7 hours later. Given the time taken for the signal from Rosetta to reach Earth (28 minutes and 20 seconds), **confirmation of the landing will come at around 17.00 CET**.

If ESA decides to switch to the back-up Site C, separation will occur at 14.04 CET at a distance of 12.5 km from the nucleus and touchdown will take place approximately 4 hours later. Confirmation of the landing will be received on Earth at around 18.30 CET. Note that all of these timings are subject to change.

ESA will announce final confirmation of the landing site (J or C) and associated scenario on 14 October after the lander's operations readiness review, basing its decision on high-resolution imagery of the landing sites acquired between now and that date.

Philae's landing is without doubt the most critical phase of the Rosetta mission. Using its 10 onboard science instruments, Philae will attempt to pull off **a feat never accomplished before: to land on the surface of a comet and analyse its soil**, in particular the nature of organic compounds collected with its drill. It will also sound the comet's interior with X-ray instruments to understand how this tiny remnant of the solar system formed.

The most important part of Philae's mission will come during the two and a half days following separation from the orbiter, when it will complete the first sequence of science operations running off its primary battery. Once the primary battery has been drained, Philae will embark on a long-term observation and analysis survey powered by its solar panels. Meanwhile, the Rosetta orbiter will continue to observe the comet and perform a series of close flybys of the nucleus during this escort phase.

The 20-strong SONC team has been busily calculating descent trajectories, solar illumination profiles and transmission profiles with the orbiter to identify landing sites. Once Philae is secured to the comet's surface, the team will have to determine the exact location of the landing and Philae's position (tilt and orientation). They will also plan science operations for the lander's 10 instruments.

CNES will be broadcasting the highlights of the landing with the Cité des Sciences et de l'Industrie in Paris, the Musée de l'Air et de l'Espace at Le Bourget and the Cité de l'Espace in Toulouse.

>> More information on CNES's Rosetta blog: www.rosetta-cnes.fr

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