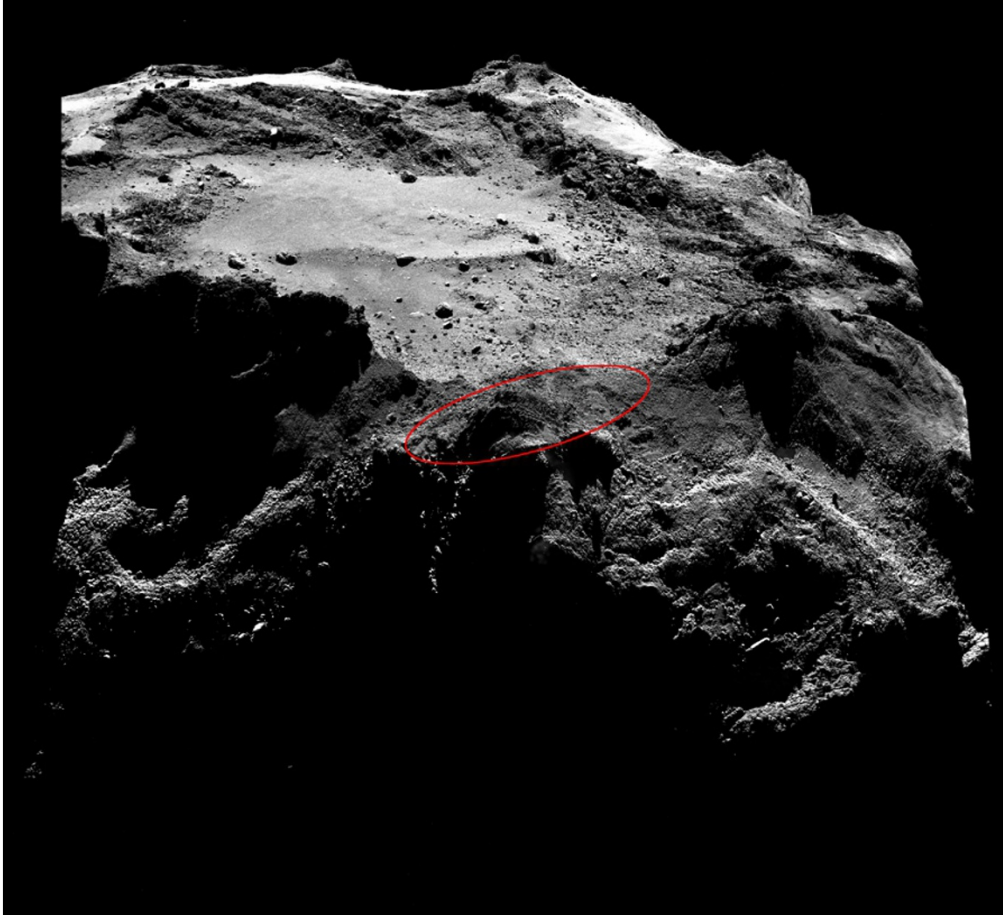


Comet scientists abandon Philae flyby

Rosetta comet orbiter will continue with its planned course which rules out making a special trip to find Philae lander.

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

Mosaic image of comet 67P/Churyumov-Gerasimenko that is being used to search for Philae.

The European Space Agency's Rosetta spacecraft will not make a dedicated flyby to search for the lost [comet lander Philae](#) any time soon, according to a post on the agency's Rosetta blog.

It has been almost three months since European Space Agency (ESA) scientists heard the last peep from Philae, which went silent when its batteries ran out just days after its bumpy 12 November landing on comet 67P/Churyumov-Gerasimenko. Amateur and professional planetary scientists [have scoured pictures](#) of 67P looking for signs of the lost lander, but its exact location remains a mystery.

Last month, mission scientists debated changing the manoeuvres that had long been planned for Rosetta, Philae's parent craft, which is currently orbiting 67P. Some hoped to switch Rosetta's trajectory to launch a search for the lander from a distance of just 6 kilometres above the comet (see '[Hunt for Philae hangs in the balance](#)'). But on 30 January, ESA said that Rosetta would continue on its planned course.

The team will stick with plans to fly over the body of the duck-shaped comet on 14 February, away from Philae, which is resting somewhere on the duck's head. Rosetta's swoop at 6 km should generate bright, shadow-free images and high-resolution data about the comet's composition, and will allow the orbiter to sample the comet's atmosphere from up close.

Awakening ahead?

The scientists may yet get a glimpse of Philae. If Rosetta travels close to the likely location of the lander on one of its future scheduled flybys and if there is time, the team could take images of the area, said ESA's Rosetta project scientist, Matt Taylor, [writing on the Rosetta blog](#). These may reveal clues about the lander's location, but would not be taken at optimum distance or illumination.

Fred Jansen, Rosetta mission manager at ESA, says that there was unlikely to be another opportunity for a dedicated lander search until later in the mission, possibly next year.

He admits that some scientists were disappointed at the decision not to look for Philae. But there were good reasons why it was not possible, he says. Overhauling the planned trajectory would be immensely complex and labour intensive, and a flyby would not be guaranteed to image the right area anyway. Travelling close to the comet, Rosetta would be buffeted by gas streaming off the surface. Combined with its high speed, this would leave considerable uncertainty in the craft's position. "There is a reasonable chance that you would not look at the correct place," says Jansen.

On the basis of images of Philae's initial bounce and using data from the radio instrument CONSERT, the lander's possible location has been narrowed down to a strip measuring around 200 metres by 20 metres. In images taken at 18 km above the comet's surface, the lander would appear just three pixels wide. Photos taken by the lander and [beamed back during its 64 hours of battery life](#) suggest that it is in a craggy shaded spot, at the base of a cliff.

This means that Philae is not currently getting enough solar energy to power itself. But as comet 67P approaches the Sun, Philae may wake up and tell Rosetta where it is. Assuming that the lander has survived the cold, the earliest it might wake is in late March, says ESA. But it is more likely to happen in May or June, when the Sun will be directly above the lander's possible location, giving Philae a better chance of receiving the solar power that it needs to reboot.

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