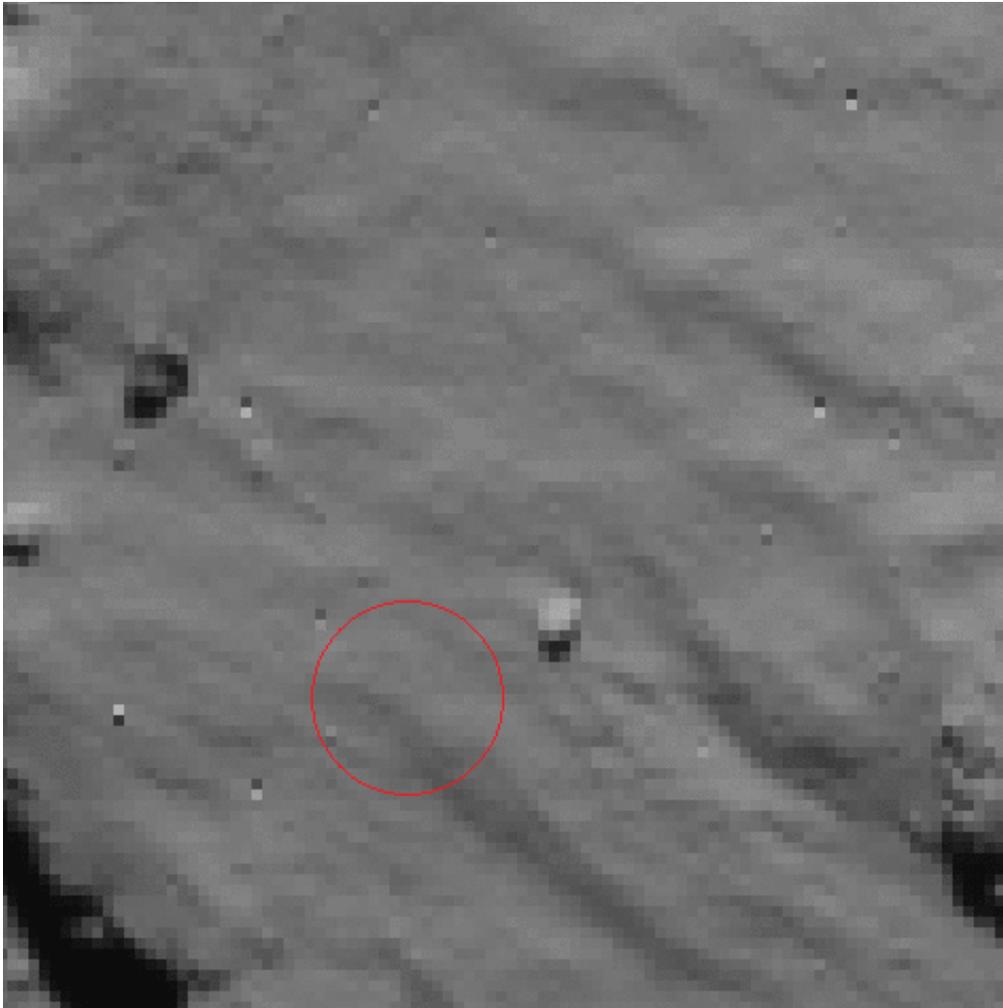


# Images show Philae's historic comet bounce

November 17 2014

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Three handout photos released on November 16, 2014, by the European Space Agency shows Philae's touchdown site before and after landing, seen by Rosetta's navigation camera on the surface of comet 67P/Churyumov-Gerasimenko

The European Space Agency (ESA) on Sunday unveiled images of the probe Philae after it bounced while making its historic landing on a comet last Wednesday.

The discovery came thanks to painstaking follow-up analysis of a series of pictures ESA had released on Friday, the agency said.

The photos appeared to show only a trail of dust kicked up by Philae when it touched down and rebounded after a pair of harpoons, designed to anchor it to the comet's surface, failed to work.

But closer scrutiny of the images has shown a bright dot that is Philae, as well as a dark dot made by its shadow as it zooms upwards in the rebound.

"It appears as a couple of brighter pixels closely accompanied by its shadow in the form of a couple of darker ones just below, both to the right of the diffuse dust cloud shadow," ESA's Rosetta mission said in a blog post.

The discovery came from hours of patient work by flight dynamics specialist Gabriele Bellei, the posting [said](#).

A science lab laden with 10 instruments, Philae was sent down to Comet 67P/Churyumov-Gerasimenko by its mother ship Rosetta, after a 10-year trek that covered 6.5 billion kilometres (four billion miles) around the inner Solar System.

After its first bounce, it is believed Philae landed and bounced once more before settling around a kilometre from its target site.

The lander found itself at an angle and in the shadow of a cliff, which meant its solar panels were unable to capture the sunlight it needed to

recharge its batteries.



A scientist wears a t-shirt depicting the European Space Agency's robot craft Philae, in the scientific mission observation centre of the Centre National d'Etudes Spatiales (CNES) in Toulouse on November 12, 2014

But ESA says Philae successfully carried out its scheduled research programme thanks to a battery that had enough charge for 60 hours' work.

Philae has now gone into standby mode for lack of power. Mission managers still have some hope it will revive as the [comet](#) races closer to the Sun, bringing greater illumination.

Approved in 1993 and launched in 2004, the Rosetta mission aims to uncover the chemical and physical secrets of comets—primordial

clusters of ice and dust that may explain the origins of the Solar System and, say some, of life on Earth.

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Citation: Images show Philae's historic comet bounce (2014, November 17) retrieved 25 April 2024 from <https://phys.org/news/2014-11-images-philae-historic-comet.html>

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