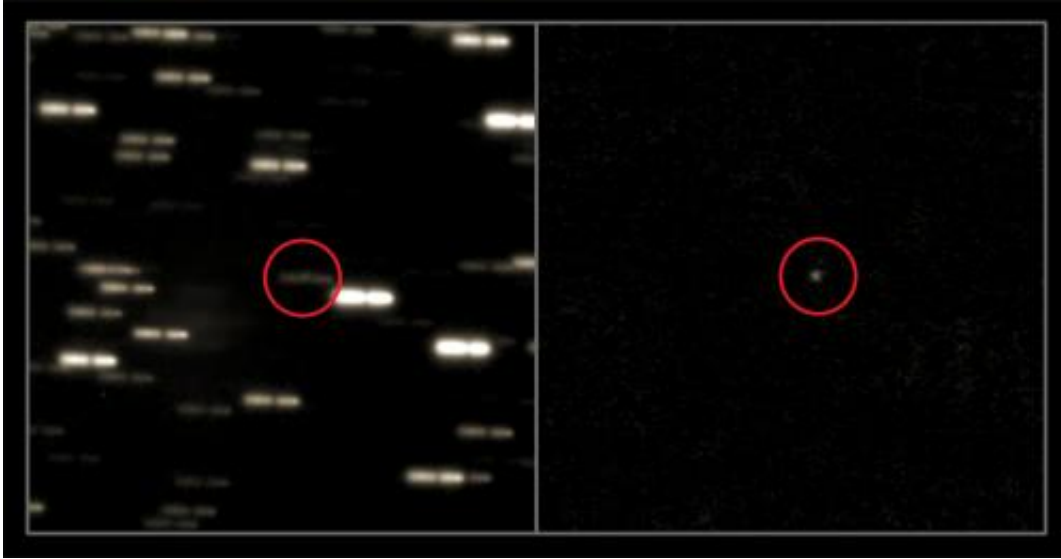


# Rosetta's comet wakes up

March 10 2014

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Comet 67P/Churyumov-Gerasimenko as observed on February 28th, 2014, with the Very Large Telescope. Left: In order to make the comet visible, the scientists superposed several exposures. The images were shifted to compensate for the comet's motion. The stars appear as broadly smudged lines. Right: Subtracting the starry backgrounds reveals the comet. Credit: © MPS/ESO

(Phys.org) —It's back! After comet 67P/Churyumov-Gerasimenko had disappeared behind the Sun and out of the Earth's view last year in October, the target comet of ESA's Rosetta mission can now be seen again. In the most recent image obtained by researchers from the Max Planck Institute for Solar System Research (MPS) in Germany and the European Southern Observatory (ESO) with the help of ESO's Very Large Telescope on February 28th, 2014, the comet presents itself

brighter than expected for the nucleus alone. This suggests that frozen ice is already beginning to vaporize and form a very thin atmosphere. In August, the spacecraft Rosetta will rendezvous with 67P/Churyumov-Gerasimenko and accompany it on its journey around the Sun until at least the end of 2015.

To obtain a measurable image of the [comet](#) from a distance of 740 million kilometers, the scientists superposed several exposures taken at slightly different times. Before, the images were shifted to compensate for the comet's motion. The stars in the background therefore appear as broadly smudged lines. Subtracting the starry background then revealed the comet: a tiny dot in space.

For researchers, this tiny dot carries valuable information. Already 67P/Churyumov-Gerasimenko is approximately 50 percent brighter than in the last images from October 2013. While the comet has moved another 50 million kilometers closer to Earth in this time (and 80 million kilometers closer to the Sun), the increase in brightness cannot be explained by the smaller distance alone. "The new image suggests that 67P is beginning to emit gas and dust at a relatively large distance from the Sun", says Colin Snodgrass from the MPS. This confirms a study presented by Snodgrass and his colleagues last year in which they had compared the comet's brightness as recorded during its previous orbits around the Sun. The calculations showed that already in March 2014 its activity would be measurable from Earth.

In the coming months, the researchers will continue to monitor how the comet's brightness develops in close collaboration with ESA. The data will help to assess what conditions await Rosetta upon arrival in August.

<https://phys.org/news/2014-03-rosetta-comet.html>

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