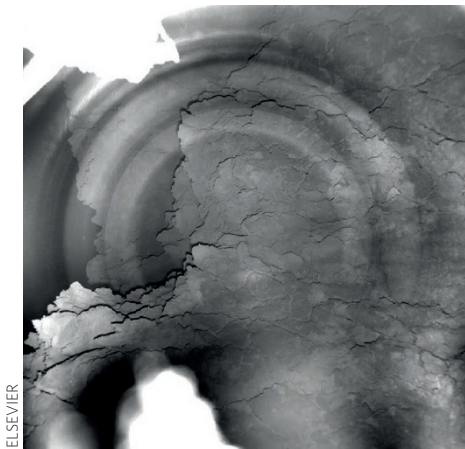


PLANETARY SCIENCE

The last close-up of a comet*Icarus* <http://doi.org/bw7f> (2016)

The fate of the comet-lander Philae, which detached from the Rosetta orbiter on 12 November 2014, is well known: after a first touchdown on the surface of 67P/Churyumov–Gerasimenko, it bounced away and reached its final destination in a quite uncomfortable — and, unfortunately, rather poorly lit and badly oriented — position, from which it could communicate only very sporadically until it was declared lost for good in January 2016. It is less known, however, that Philae did return some unique scientific results from the surface of a comet.

Stefan Schröder and colleagues present an analysis of the last six images obtained by Philae's downward-looking camera ROLIS (the very last is pictured) from the final resting place of the lander. The images, obtained in two different geometries at the exceptional resolution of ~ 1 mm per pixel, allowed the authors to create a shape model of the surface of the site, which looks cracked into plates but is relatively smooth. This appearance, very distinct from the one of Philae's first impact site, which was characterized by the presence of centimetre- to metre-sized pebbles, suggests the presence of a consolidated crust overlying an unconsolidated fluffy interior. This result confirms the wide diversity of environments present in a comet's nucleus, both at a macroscopic and microscopic scale.

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