

Rosetta's comet: In the shadow of the coma

November 27 2014



Four image NAVCAM mosaic comprising images taken on 20 November.
Credits: ESA/Rosetta/NAVCAM – CC BY-SA IGO 3.0

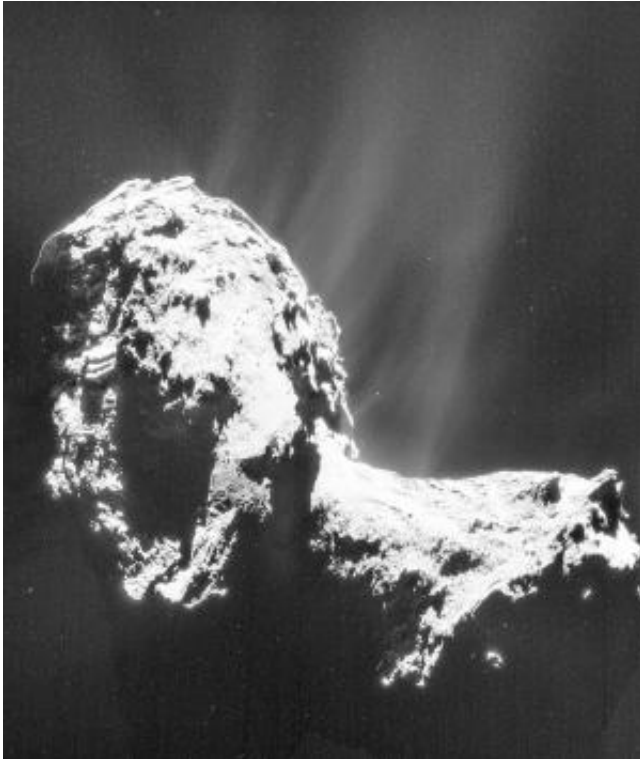
This NAVCAM mosaic comprises four individual images taken on 20 November from a distance of 30.8 km from the centre of Comet 67P/C-G. The image resolution is 2.6 m/pixel, so each original 1024 x 1024 pixel frame measured about 2.7 km across. The mosaic has been slightly rescaled, rotated, and cropped, and measures roughly 4.2 x 5.0 km.

Due to rotation and translation of the [comet](#) during the image taking sequence, making a mosaic involves some compromises, as features change slightly from one image to the next. In addition, scattering in the NAVCAM optics can lead to large-scale intensity artefacts which are difficult to cater for when mosaicing.

Thus, for this set of NAVCAM images, some pre-mosaicing masking and post-mosaicing localised intensity adjustments have been made to reduce the low-level artefacts. By their very nature, these adjustments are not perfect. However, as always, the individual images have also been made available below to allow you to check the accuracy of the mosaicing and intensity matching.

The image shows vast outflows of gas and dust, as well as smaller 'jets' stemming from the neck and the larger lobe of the comet, suggesting increased levels of activity since rendezvous in August.

Post-processing in LightRoom was also used to bring out the faint outflows, while retaining the brighter features on the comet. Exceptionally, an increased exposure and contrast version of the mosaic is also provided to give an even better view of the outflowing material.



Same as the mosaic above, with increased exposure and contrast. Credits: ESA/Rosetta/NAVCAM – CC BY-SA IGO 3.0

In particular, at the bottom of the mosaic, the non-illuminated part of the comet stands out as a silhouette against the broader diffuse emission coming from the comet's coma. There are hints of a diffuse 'atmosphere' close to the surface of the comet seen along the illuminated edges, but this could be due to scattering in the NAVCAM optics. The large number of small white blobs in the image are likely specks of dust or other small objects in the vicinity of the comet.

Provided by European Space Agency

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