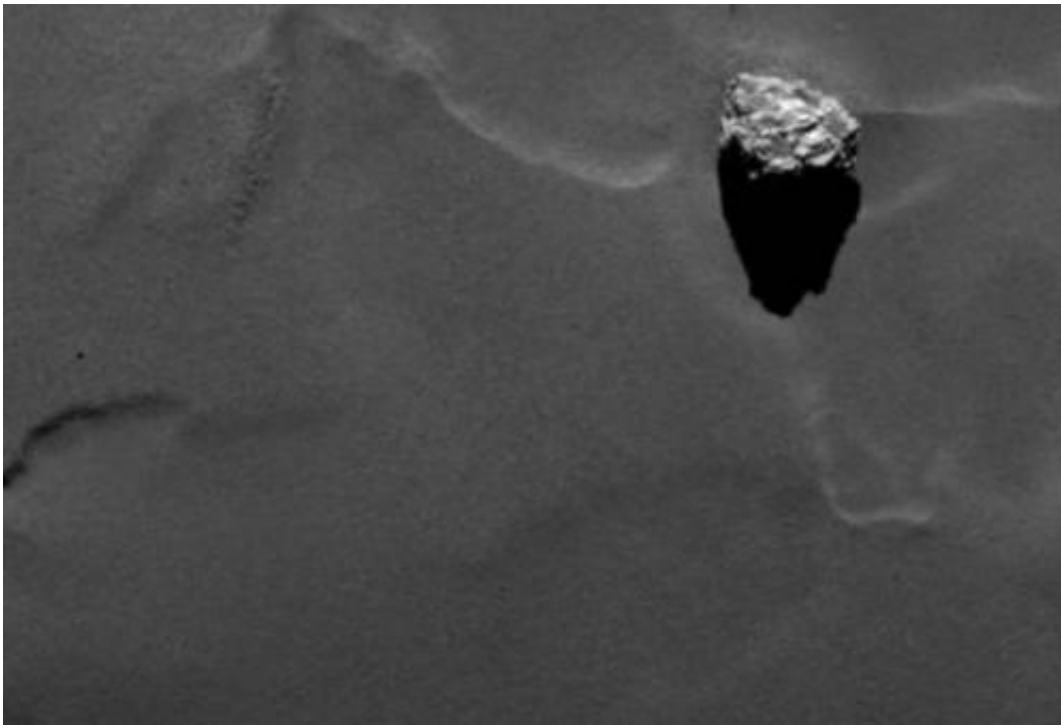


Scientists name one of the largest boulders on Rosetta's comet after an Egyptian pyramid

October 10 2014



Close-up of the boulder Cheops as it casts a long shadow on the surface of comet 67P/Churyumov-Gerasimenko. Cheops has a size of approximately 45 meters and is the largest structure within an a group of boulders located on the lower side of the comet's larger lobe. The image was obtained on September 19th by Rosetta's scientific imaging system OSIRIS from a distance of 28.5 kilometers. One pixel in this image corresponds to 50 centimeters. Credit:

ESA/Rosetta/MPS for OSIRIS Team

MPS/UPD/LAM/IAA/SSO/INTA/UPM/DASP/IDA

The scientific imaging system OSIRIS on board ESA's spacecraft Rosetta has caught a spectacular glimpse of one of the many boulders that cover the surface of comet 67P/Churyumov-Gerasimenko. With a maximum extension of approximately 45 meters it is one of the larger structures of this kind on the comet and stands out among a group of boulders located on the lower side of 67P's larger lobe. Since this cluster of boulders reminded the scientists of the pyramids of Giza, the boulder has been named Cheops after the largest pyramid within the Giza Necropolis. The boulder-like structures that Rosetta has revealed on the surface of 67P in the past months are among the comet's most striking and mysterious features.

The large boulder now dubbed Cheops was seen for the first time in images obtained in early August upon Rosetta's arrival at the [comet](#). In the past weeks as Rosetta has navigated closer and closer to the comet's surface, OSIRIS imaged the unique structure again – but this time with a much higher resolution of 50 centimeters per pixel.

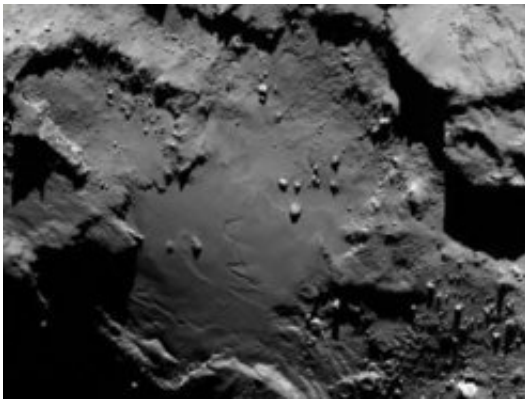
As many of the smaller and larger boulders currently being mapped by the OSIRIS team, Cheops stands out from the darker underground. The highly resolved image now startles scientists with striking details. "The surface of Cheops seems to be very craggy and irregular", OSIRIS Principal Investigator Holger Sierks from the Max Planck Institute for Solar System Research (MPS) in Germany describes. Especially intriguing are small patches on the boulder's surface displaying the same brightness and texture as the underground. "It looks almost as if loose dust covering the surface of the comet has settled in the boulder's cracks. But, of course, it is much too early to be sure", says Sierks.

Apart from their size distribution, almost all properties of 67P's many boulders are still a mystery to researchers. What material are they made of? What are their physical properties such as density and stability? How where they created? As OSIRIS continues to monitor the comet's surface

in the next months the team hopes for clues. "If, for example, the boulders are exposed by cometary activity or are displaced following the comet's gravity field, we should be able to track this down in our images", says Sierks.

Tomorrow, Rosetta will begin its Close Observation Phase reaching a distance of only 10 kilometers from the comet's surface – and giving OSIRIS a chance at an even closer view of one of 67P's many mysteries.

Rosetta is an ESA mission with contributions from its member states and NASA. Rosetta's Philae lander is provided by a consortium led by DLR, MPS, CNES and ASI. Rosetta will be the first mission in history to rendezvous with a comet, escort it as it orbits the Sun, and deploy a lander to its [surface](#).



The group of boulders in the center of this image reminded scientists of the Giza Necropolis. The largest boulder has therefore been named Cheops. Credit:

ESA/Rosetta/MPS for OSIRIS Team

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