

## Ground-based observations of 67P/Churyumov-Gerasimenko

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### Abstract

I will describe the campaign of observations from ground-based (and Earth orbiting) telescopes that supports the Rosetta mission. Rosetta gets closer to the nucleus than any previous mission, and returns wonderfully detailed measurements from the heart of the comet, but at the cost of not seeing the large scale coma and tails. The ground-based campaign fills in the missing part of the picture, studying the comet at  $\sim 1000\text{km}$  resolution, and following how the overall activity of the comet varies. These data provide context information for Rosetta, so changes in the inner coma seen by the spacecraft can be correlated with the phenomena observable in comets. This not only helps to complete our understanding of the activity of 67P, but also allows us to compare it with other comets that are only observed from the ground, and in that way extend the results of the Rosetta mission to the wider population.

The ground-based campaign includes observations with nearly all major facilities world-wide. In 2014 the majority of data came from the ESO VLT, as the comet was still relatively faint and in Southern skies, but as it returns to visibility from Earth in 2015 it will be considerably brighter, approaching its perihelion in August, and at Northern declinations. I will show results from the 2014 campaign, including visible wavelength photometry and spectroscopy, and the latest results from early 2015 observations. I will also describe the varied observations that will be included in the campaign post-perihelion, and how all of these results fit around what we are learning about 67P from Rosetta.

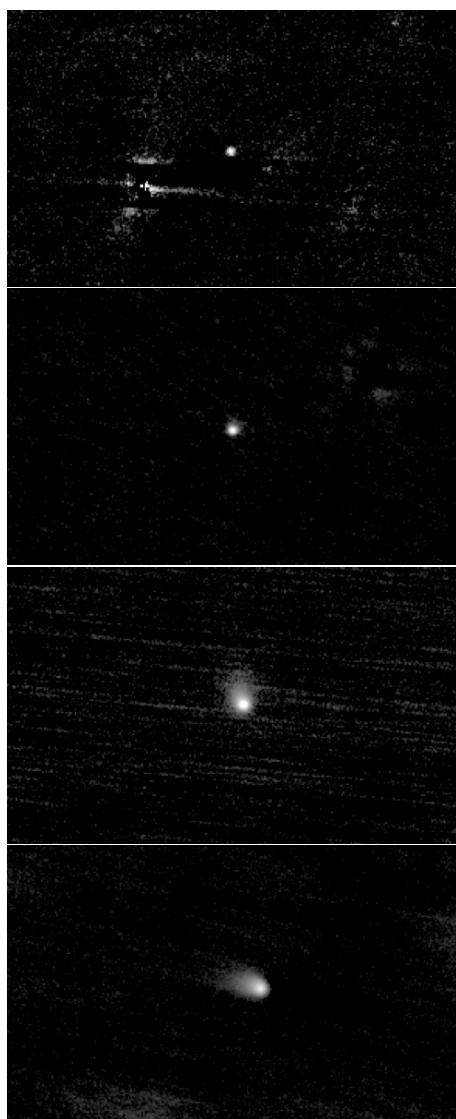


Figure 1: The comet in 2014, in R band images from the ESO VLT, taken in February, May, July and October, showing the evolution of the coma as the comet became active.