



Morphology and Dynamics of Jets of Comet 67P Churyumov-Gerasimenko: Early Phase Development

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The scientific camera, OSIRIS (Optical, Spectroscopic, and Infrared Remote Imaging System), onboard the Rosetta spacecraft comprises a Narrow Angle Camera (NAC) for nucleus surface and dust studies and a Wide Angle Camera (WAC) for the wide field of dust and gas coma investigations. The dynamical behavior of jets in the dust coma continuously monitored by using dust filters from the arrival at the comet (August 2014) throughout the mapping phase (Oct. 2014) is described here. The analysis will cover the study of the time variability of jets, the source regions of these jets, the excess brightness of jets relative to the averaged coma brightness, and the brightness distribution of dust jets along the projected distance. The jets detected between August and September originated mostly from the neck region (Hapi). Morphological changes appeared over a time scale of several days in September. The brightness slope of the dust jets is much steeper than the background coma. This might be related to the sublimation or fragmentation of the emitted dust grains. Inter-comparison with results from other experiments will be necessary to understand the difference between the dust emitted from Hapi and those from the head and the body of the nucleus surface. The physical properties of the Hapi jets will be compared to dust jets (and their source regions) to emerge as comet 67P moves around the perihelion.